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LABOUR MARKET INFORMATION AND ANALYSIS

LABOUR MARKET OUTLOOK FOR ONTARIO, 1981-1986

By

Farid Siddiqui, Ray Vafa
C.Y. Hsu, and Brinda Murti

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ONTARIO MANPOWER COMMISSION
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SUMMARY AND CONCLUSIONS

1. *The labour market in Ontario over the next five years, under our medium growth economic scenario, is projected to be relatively tight. The growth in employment is projected to be slightly higher than the growth in the labour force. These projections assume that growth in employment would not be impeded by bottlenecks in the labour markets. However, it may not be feasible to achieve this projected growth in employment if the recent shortages of skilled and experienced workers persist.*

2. *Over the next five years, employment in Ontario is projected to grow by 110,300 per year and the labour force is projected to increase by approximately 100,000 persons per year. Females would account for 60 per cent of this increase in the labour force.*

3. *On the average, 170,200 job openings per year would become available as a result of growth in employment and because of the need to replace retiring workers. The educational and/or training mix of workers required to fill these jobs is projected to be as follows:*

   - *4.3 per cent will require a university degree;*
   - *7.4 per cent will require graduation from a college program;*
   - *14.0 per cent will require either a university degree or graduation from a college program;*
   - *29.7 per cent will require a high school graduation;*
   - *10.3 per cent will rquire training in a highly skilled blue-collar trade;*

WHITE COLLAR OCCUPATIONS

- 5.3 per cent will require training in medium skilled blue-collar trades;
- 28.9 per cent will be in low skilled blue-collar occupations.

4. On the average, 167,500 persons per year would be entering Ontario's labour force from various sources. The composition of these new entrants to the labour force from these sources is projected to be as follows:

- 64.4 per cent would come from the formal education sector in Ontario;
- 31.7 per cent would be entering for the first time or re-entering the labour force from households;
- 2.4 per cent would be entering the civilian work force after being released from the armed forces;
- 1.5 per cent would be the net gain from international and inter-provincial migration.

5. Of the 167,500 new entrants who will be entering the Ontario's labour force annually:

- 13.3 per cent would have completed a university degree;
- 10.3 per cent would have completed a college program;
- 14.9 per cent would enter the labour force without completing their program either at the university or college level;
- 34.1 per cent would have completed a high school education, roughly half of these being labour force entrants from the households;
- 25.7 per cent would enter the labour force without completing a high school education;
- 1.7 per cent would enter the labour force from the community colleges or from the armed forces with training in highly or medium skilled blue-collar occupations. In addition to these new entrants,

8,800 workers currently employed would be completing apprenticeship and/or modular training programs annually leading to highly skilled tradesmen status.

6. *An analysis of the potential imbalances between the projected manpower requirements and supply over the 1981-86 period indicates that:*

- *Over the next five years, the combined supply of university and college graduates will fall short of the projected requirements by about 4,500 per year, under our medium-growth scenario.*

- *The overall supply of university graduates would far exceed the projected requirements. However, this does not necessarily mean that unemployment among university graduates will increase. It is more likely that they will take jobs not requiring a university degree. In some occupations, such as engineering and computer related professions, the shortages currently being experienced will get worse.*

- *Employment opportunities for college graduates appear to be much more promising. In fact, for some occupations where the colleges are the main source of supply, such as in the case of engineering technicians and technologists, the college system will not be producing enough graduates to meet the need.*

- *Our analysis indicates the co-existence of shortages of post-secondary graduates in some fields of study and a surplus in others. This leads us to conclude that the magnitude of manpower shortages in some specific disciplines is likely to be more severe than the overall shortfall of 4,500 college and university graduates per year would suggest.*

- *Shortages in the highly skilled and medium skilled blue-collar occupations currently being experienced are projected to continue in the future. The potential supply from the apprenticeship and modular training programs would provide roughly half of the manpower requirements for these occupations.*

- *The total supply of low skilled white-collar workers will slightly exceed the number of job openings in this category. This group, which includes youth under age 19, consists of those who enter the labour market without completing their education at the post-secondary level and those with just a high school education. While the youth unemployment rate may decline somewhat because of the declining youth population, the youth unemployment problem is likely to continue.*

- *On the other hand, the total supply of low skilled blue-collar workers will fall slightly short of the projected requirements for these workers.*

7. *Even in the high-growth scenario, the manufacturing sector which employs roughly one-quarter of the total work force in Ontario, will be contributing only 17 per cent to the total growth in employment during the 1981-86 period.*

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INTRODUCTION

The purpose of this report is to provide projections of manpower requirements and supply in Ontario for blue- and white-collar occupations by level of education to the mid-1980's, examine the imbalances between projected requirements and supply, and draw out the implications of the imbalances for manpower issues.

The report consists of three chapters. Chapter I presents the projections of manpower requirements for blue- and white-collar occupations by level of education. These projections are based on our current understanding of the future economic trends and would therefore have to be modified if the economic outlook changes significantly. Indeed because of the recent energy accord between the Federal and Alberta Governments, and its long-term economic implications for Ontario, the Ontario Manpower Commission will be updating the projections presented in this report.

Chapter II presents projections of population, labour force, net additions to the labour force, and the potential labour supply from the formal education sector, apprenticeship programs, interprovincial and international migration and the household sector in Ontario. Chapter III concludes with a discussion of the potential imbalances between projected manpower requirements and supply and their implications for manpower issues in Ontario over the 1981-86 period.

CHAPTER I

EMPLOYMENT OUTLOOK FOR ONTARIO, 1981 TO 1986

This chapter presents employment projections by industry for Ontario between 1981 and 1986. It also includes information on the total number of job openings, due to growth in employment and replacement needs, by industry. Finally, it presents the distribution of total job openings by blue- and white-collar occupations and by level of education and/or training.

In order to cover a plausible range of employment outlooks for Canada and Ontario between 1981 and 1986, three macroeconomic scenarios (low, medium, and high-growth) were prepared on the basis of three different sets of underlying assumptions concerning the domestic and foreign economic environments. The projections of employment for Canada were made using the University of Toronto's FOCUS (Forecasting and User Simulation) model. After the national employment projections were obtained, the Industry-Ontario model, also at the University of Toronto, was used to derive the employment projections by industry for Ontario. On the basis of these projections, the total numbers of job openings in Ontario due to growth in employment and replacement needs were estimated for blue- and white-collar occupations. These projections were in turn prepared by industry and for the various levels of education and/or training within those occupations.

Accordingly, this chapter begins with an overview of our national employment projections and their comparison with other available national employment projections. It proceeds to a discussion of provincial projections of employment and job openings for blue- and white-collar occupations by industry, and concludes with our projections of the numbers of job openings by level of education and/or training within these occupations between 1981 and 1986.

It should be noted that the figures for 1981-86 presented in this report reflect the underlying assumptions on which they are based. It cannot be emphasized too strongly that these projections are not a statement about what will happen, or what should happen. They are a conditional statement about what may happen if the underlying assumptions hold.

1. National Employment Projections, 1981 to 1986

The national employment projections for the period 1981-86 were generated using the FOCUS model, which is a quarterly macroeconometric model of the Canadian economy developed and maintained at the Institute for Policy Analysis of the University of Toronto. The model contains a total of just over 500 variables describing the domestic and foreign economic environment. Of these, approximately 185 are exogenous variables for which, depending on the different assumptions made, different values can be assumed in order to make projections of the national economy.

Three macroeconomic scenarios relating to low-growth, medium-growth and high-growth were prepared on the basis of underlying assumptions made for the key exogenous variables in the FOCUS model. The distinction among the low, medium and high-growth scenarios lies primarily in the different assumptions made regarding the strength of recovery in the U.S. economy in 1981 and its subsequent growth. These assumptions are set out in detail in Tables 1, 2 and 3.[1]

The national projections obtained with the FOCUS model on the basis of the assumptions described in the preceding sections show that real economic growth in Canada will be somewhat slower between 1981 and 1986 than in the 1970's. Even in the high-growth scenario, real gross national product (GNP) is projected to increase at an average annual rate of only 3.3 per cent between 1981 and 1986, which is much lower than the annual average of

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[1] At the time this report was being prepared the Alberta and Federal Government were negotiating an energy price agreement. An energy accord was reached on September 1, 1981. Under the agreement, the wellhead price for existing conventional oil will rise to $57.75 a barrel in mid-1986 while the price of new oil produced from new fields, oil sands and on Canada Lands will increase to $77.48 per barrel by 1986. Our projections are based on the assumption that the blended domestic price of oil will increase to approximately $50 per barrel by 1986.

TABLE 1

MAJOR ASSUMPTIONS UNDERLYING THE LOW-GROWTH SCENARIO

		1980	1981	1982	1983	1984	1985	1986
					Annual Rate of Change			
U. S. real[a] GNP		-0.2	1.1	3.3	3.1	2.2	2.2	3.2
U. S. GNP deflator		7.2	9.7	9.8	9.0	9.1	8.7	8.5
U. S. index of industrial production		-4.4	0.2	3.6	3.1	3.7	3.1	3.1
U. S. real personal consumption on motor vehicles and parts		-7.8	3.9	4.6	2.9	3.5	3.7	3.5
Price index of exports of petroleum and gas		66.0	14.1	16.1	11.8	11.1	11.4	12.3
Price index of imports of petroleum		73.0	24.6	14.3	11.8	11.2	11.4	11.9
CPI for auto purchases		11.3	8.7	7.1	7.5	6.8	5.8	5.1
Target rate of growth for M1[b]		4.84	5.48	5.83	6.18	8.40	9.26	7.47
					Level			
Price of domestic oil ($/bbl.)		16.53	24.76	31.43	37.68	41.56	44.18	49.98
Bank of Canada bank rate	(%)	12.89	14.54	14.28	13.65	12.23	11.24	11.10
Exchange rate (U.S.$/CND.$)		85.5	84.4	86.4	87.5	88.4	88.7	89.3
Total Canadian population	(thousands)	23,920	24,173	24,427	24,684	24,943	25,200	25,456
Female source population, 15-24 yrs.	(thousands)	2,262	2,248	2,220	2,181	2,135	2,090	2,041
Female source population, 25-54 yrs.	(thousands)	4,622	4,720	4,825	4,931	5,042	5,155	5,274
Female source population, 55+ yrs.	(thousands)	2,295	2,355	2,411	2,489	2,523	2,580	2,635
Male source population, 15-24 yrs.	(thousands)	2,316	2,308	2,285	2,245	2,200	2,154	2,103
Male source population, 25-54 yrs.	(thousands)	4,592	4,693	4,799	4,908	5,023	5,140	5,262
Male source population, 55+ yrs.	(thousands)	1,918	1,956	1,992	2,028	2,061	2,098	2,133
Participation rate, female 15-24 yrs.	(%)	62.6	63.6	65.0	66.4	67.8	68.9	70.0
Participation rate, female 25-54 yrs.	(%)	60.1	61.3	63.2	65.2	66.8	68.5	70.0
Participation rate, female 55+ yrs.	(%)	18.3	18.3	19.0	19.3	19.6	19.8	20.0
Participation rate, male 15-24 yrs.	(%)	72.0	72.3	73.2	74.1	75.3	76.3	77.3
Participation rate, male 25-54 yrs.	(%)	94.8	94.8	94.9	95.0	95.1	95.1	95.1
Participation rate, male 55+ yrs.	(%)	46.3	46.2	46.1	46.0	45.8	45.7	45.5

[a] "Real" means constant dollars.

[b] M1, the narrowly defined money supply, is the sum of currency held by the public and demand deposits that are payable by banks on demand through the presentation of a cheque.

TABLE 2

MAJOR ASSUMPTIONS UNDERLYING THE MEDIUM-GROWTH SCENARIO

		1980	1981	1982	1983	1984	1985	1986
					Annual Rate of Change			
U. S. real[a] GNP		-0.2	2.1	3.2	3.0	3.3	3.8	3.4
U. S. GNP deflator		7.2	9.4	9.4	8.5	9.6	9.2	8.5
U. S. index of industrial production		-4.4	0.9	7.2	4.3	3.1	6.7	4.4
U. S. real personal consumption on motor vehicles and parts		-7.8	8.9	8.0	0.5	2.5	5.4	4.0
Price index of exports of petroleum and gas		66.0	14.1	16.1	11.8	11.1	11.4	12.3
Price index of imports of petroleum		73.0	24.6	14.3	11.8	11.2	11.4	11.9
CPI for auto purchases		11.3	8.9	7.1	7.7	6.9	5.9	5.3
Target rate of growth for M1[b]		4.84	5.48	5.83	6.18	8.40	9.26	7.47
					Level			
Price of domestic oil ($/bbl.)		16.53	24.76	31.43	37.68	41.56	44.18	49.98
Bank of Canada bank rate	(%)	12.89	14.54	14.28	13.65	12.23	11.24	11.10
Exchange rate (U.S. $/CND.$)		85.5	84.4	86.4	87.5	88.4	88.7	89.3
Total Canadian population	(thousands)	23,920	24,173	24,427	24,684	24,943	25,200	25,456
Female source population, 15-24 yrs.	(thousands)	2,262	2,248	2,220	2,181	2,135	2,090	2,041
Female source population, 25-54 yrs.	(thousands)	4,622	4,720	4,825	4,931	5,042	5,155	5,274
Female source population, 55+ yrs.	(thousands)	2,295	2,355	2,411	2,489	2,523	2,580	2,635
Male source population, 15-24 yrs.	(thousands)	2,316	2,308	2,285	2,245	2,200	2,154	2,103
Male source population, 25-54 yrs.	(thousands)	4,592	4,693	4,799	4,908	5,023	5,140	5,262
Male source population, 55+ yrs.	(thousands)	1,918	1,956	1,992	2,028	2,061	2,098	2,133
Participation rate, female 15-24 yrs.	(%)	62.6	64.0	65.4	66.9	68.4	69.9	71.2
Participation rate, female 25-54 yrs.	(%)	60.1	61.8	63.6	65.5	67.3	68.9	70.4
Participation rate, female 55+ yrs.	(%)	18.3	18.7	19.3	19.7	20.0	20.3	20.6
Participation rate, male 15-24 yrs.	(%)	72.0	72.6	73.3	74.5	75.8	77.1	78.3
Participation rate, male 25-54 yrs.	(%)	94.8	95.0	95.1	95.2	95.3	95.3	95.3
Participation rate, male 55+ yrs.	(%)	46.3	46.3	46.1	45.9	45.7	45.5	45.3

[a] "Real" means constant dollars.

[b] M1, the narrowly defined money supply, is the sum of currency held by the public and demand deposits that are payable by banks on demand through the presentation of a cheque.

TABLE 3

MAJOR ASSUMPTIONS UNDERLYING THE HIGH-GROWTH SCENARIO

		1980	1981	1982	1983	1984	1985	1986
					Annual Rate of Change			
U. S. real[a] GNP		-0.2	2.6	4.3	3.9	3.5	3.6	3.4
U. S. GNP deflator		7.2	9.3	8.9	8.7	9.1	8.6	8.4
U. S. index of industrial production		-4.4	1.4	7.4	4.7	3.6	7.3	5.3
U. S. real personal consumption on motor vehicles and parts		-7.8	9.0	9.3	5.6	4.8	5.4	4.1
Price index of exports of petroleum and gas		66.0	14.1	16.1	11.8	11.1	11.4	12.3
Price index of imports of petroleum		73.0	24.6	14.3	11.8	11.2	11.4	11.3
CPI for auto purchases		11.3	9.0	7.2	7.2	6.9	6.3	5.8
Target rate of growth for M1[b]		4.84	5.48	5.83	6.18	8.40	9.26	7.47
					Level			
Price of domestic oil ($/bbl.)		16.53	24.76	31.43	37.68	41.56	44.18	49.98
Bank of Canada bank rate	(%)	12.89	14.54	14.28	13.65	12.23	11.24	11.10
Exchange rate (U.S. $/CND.$)		85.5	84.4	86.4	87.5	88.4	88.7	89.3
Total Canadian population	(thousands)	23,920	24,173	24,427	24,684	24,943	25,200	25,456
Female source population, 15-24 yrs.	(thousands)	2,262	2,248	2,220	2,181	2,135	2,090	2,041
Female source population, 25-54 yrs.	(thousands)	4,622	4,720	4,825	4,931	5,042	5,155	5,274
Female source population, 55+ yrs.	(thousands)	2,295	2,355	2,411	2,489	2,523	2,580	2,635
Male source population, 15-24 yrs.	(thousands)	2,316	2,308	2,285	2,245	2,200	2,154	2,103
Male source population, 25-54 yrs.	(thousands)	4,592	4,693	4,799	4,908	5,023	5,140	5,262
Male source population, 55+ yrs.	(thousands)	1,918	1,956	1,992	2,028	2,061	2,098	2,133
Participation rate, female 15-24 yrs.	(%)	62.6	64.0	65.5	67.0	68.6	70.2	71.6
Participation rate, female 25-54 yrs.	(%)	60.1	61.9	63.7	65.8	67.5	69.1	70.7
Participation rate, female 55+ yrs.	(%)	18.3	18.8	19.4	19.7	20.1	20.5	20.8
Participation rate, male 15-24 yrs.	(%)	72.0	72.7	73.4	74.5	76.0	77.4	78.6
Participation rate, male 25-54 yrs.	(%)	94.8	95.0	95.1	95.2	95.3	95.3	95.4
Participation rate, male 55+ yrs.	(%)	46.3	46.2	46.1	46.0	45.9	45.8	45.7

[a] "Real" means constant dollars.

[b] M1, the narrowly defined money supply, is the sum of currency held by the public and demand deposits that are payable by banks on demand through the presentation of a cheque.

3.7 per cent experienced in the seventies (see Table 4 and Appendices I-A, I-B, and I-C). In the low- and medium-growth scenarios the increase in real GNP is projected at an average annual rate of 2.9 and 3.0 per cent, respectively.

As a result of the relatively slow growth in real GNP, total employment in Canada is expected to grow at an annual average rate of between 2.3 (low-growth) and 2.6 per cent (high-growth) between 1981 and 1986 (see Table 4). This rate is lower than the annual average growth rate of 3.2 per cent in the seventies and 2.8 per cent in the sixties.

The growth in employment in all three scenarios will be greater in 1981 than in 1980. In 1980 employment in Canada increased by 286,000, and in 1981 it is projected to increase by 307,000 in the low-growth scenario and 384,000 in the high-growth scenario but the projected increase is still below the increase of 397,000 experienced in 1979. The Canadian economy is expected to improve in 1982 and 1983. Employment is expected to increase by 199,000 and 282,000 in the medium-growth scenario in 1982 and 1983, respectively. A gradual slowdown in the economy is projected to start in 1984, which will result in a growth of employment of 269,000 in the low-growth scenario and 291,000 in the high-growth scenario in 1986.

2. A Comparison of the Available Projections of National Employment

Several short-term and medium-term projections of national employment and output are currently available. The short-term projections, those for up to three years into the future, include the quarterly projections made by Data Resources of Canada (1981 to 1983), the Conference Board of Canada (1981 to 1982), the annual projections made by Royal Bank of Canada (1980 to 1982), Wood Gundy (1980 to 1983), and Chase Econometric (1980 to 1982). The medium-term projections, those for up to ten years into the future, include those by Data Resources of Canada (1980 to 1990), and the Department of Finance (1980 to 1985). It should be noted that the projections made by Royal Bank of Canada and the Department of Finance relate only to rates of change in the levels of employment and in the real GNP. A summary comparison appears in Table 5.

The projections from the above sources suggest an employment range of between 10,377,000 and 11,034,000 for Canada in 1981, whereas our

TABLE 4

NATIONAL OUTPUT AND EMPLOYMENT, 1971 TO 1986

	Historical		Projections						
	Average 1961-70	Average 1971-80	1981	1982	1983	1984	1985	1986	Average 1981-86
Low-Growth Scenario									
Real GNP (rate of change)	5.5	3.9	2.0	3.1	3.6	3.0	2.8	2.7	2.9
Employment (rate of change)	2.8	3.2	2.9	1.6	2.4	2.3	2.3	2.3	2.3
Net Change in employment (000's)	172	270	307	175	272	262	266	269	259
Medium-Growth Scenario									
Real GNP (rate of change)	5.5	3.9	2.7	3.2	3.5	3.0	2.9	2.7	3.0
Employment (rate of change)	2.8	3.2	3.3	1.8	2.5	2.6	2.4	2.3	2.5
Net Change in employment (000's)	172	270	349	199	282	296	278	276	280
High-Growth Scenario									
Real GNP (rate of change)	5.5	3.9	3.0	3.8	3.9	3.2	2.9	2.7	3.3
Employment (rate of change)	2.8	3.2	3.6	1.9	2.6	2.5	2.5	2.4	2.6
Net Change in employment (000's)	172	270	384	209	290	290	292	291	292

TABLE 5

A COMPARISON OF VARIOUS NATIONAL EMPLOYMENT AND OUTPUT PROJECTIONS, 1981 TO 1986

Year	Medium - Term Projections					Short - Term Projections				
	Data Resources	Department of Finance	OMC Projections Low-Growth	OMC Projections Medium-Growth	OMC Projections High-Growth	Conference Board of Canada	Data Resources	Wood Gundy	Royal Bank	Chase Econometric
				Level of Employment						
1981	10,992		10,962	11,004	11,039	10,925	11,034	10,648		10,377
1982	11,316		11,137	11,203	11,248	11,122	11,304	10,995		10,688
1983	11,596		11,409	11,485	11,538		11,552	11,391		
1984	11,794		11,671	11,781	11,828					
1985	12,061		11,937	12,059	12,120					
1986	12,339		12,206	12,335	12,411					
				Annual Rate of Change in Employment						
1981	3.2	0.8	2.9	3.3	3.6	2.5	3.6	0.5	2.2	0.7
1982	2.9	2.5	1.6	1.8	1.9	1.8	2.4	3.3	2.7	3.0
1983	2.5	2.5	2.4	2.5	2.6		2.2	3.6		
1984	1.7	2.5	2.3	2.6	2.5					
1985	2.3	2.3	2.3	2.4	2.5					
1986	2.3		2.3	2.3	2.4					
				Annual Rate of Change in Real GNP						
1981	3.9	1.0	2.0	2.7	3.0	2.9	3.5	0.9	1.8	2.9
1982	4.4	4.0	3.1	3.2	3.8	3.0	3.3	4.0	4.0	3.6
1983	3.3	3.7	3.6	3.5	3.9		3.8	3.7		
1984	3.7	3.6	3.0	3.0	3.2					
1985	3.9	3.3	2.8	2.9	2.9					
1986	3.8		2.7	2.7	2.7					
Publication Date	June 1981	October 1980		July 1981		March 1981	July 1981	November 1980	January 1981	February 1980

low and high projections for that year are 10,962,000 and 11,039,000. Similarly, our projections for 1982 in all three scenarios fall within the employment ranges of 10,688,000 and 11,316,000 provided by these sources.

The sources listed earlier project a Canadian employment level between 10,945,000 and 11,596,000 for 1983. Our low- and medium-growth projections fall within this range, but our high-growth projections are slightly higher.

From 1984 to 1986 the only other source which provides projections of national employment level are those of Data Resources of Canada, whose medium-term projections are very similar to our medium-growth scenario. In addition, other medium-term projections are also provided by the Federal Department of Finance but they are given only in terms of annual rate of growth. Our medium-growth projections for 1984 and 1985 are similar to those projected by the Department of Finance.

In general, our projections of national employment are in line with the more recent projections set out by the Conference Board of Canada, and Data Resources.

3. National Employment Projections by Industry, 1981 to 1986

The projections of total employment for Canada were disaggregated by industry using the Industry-Ontario model.[2] The employment projections by

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[2]The Industry-Ontario model takes ten categories of real final demand expenditure from the FOCUS model and translates them into national real domestic product for 23 industries through an impact matrix prepared from Statistics Canada's 1971 input-output tables. Employment in each industry is then determined on the basis of the projected real domestic product and the estimated average hours worked required each year in that industry combined with productivity-growth trends projected into the future. Lastly, the sums of industrial output and employment are constrained to equal the national figures of the corresponding scenario developed with the FOCUS model. This report presents employment projections for 11 major industry sectors only.

The ten categories of real final demand expenditure are consumption expenditure on durable goods, semi-durable goods, non-durable goods, and consumer services, business and non-residential construction, business investment in machinery and equipment, government investment in construction, government investment in machinery and equipment, exports of goods and services, and government expenditure on goods and services.

industry and the annual net change in employment between 1981 and 1986 for the 11 major industries are presented in Tables 6 and 7, respectively.

These projections suggest that the Canadian employment structure will continue to evolve as in the past. In the seventies most services-producing industries; finance, community, business and personal services, public administration and trade were the fastest growing sectors in employment (see Table 8). Between 1981 and 1986 finance and trade are projected to continue as the fastest growing sectors, but in all three scenarios employment in community, business and personal services and public administration is projected to grow at a slower pace than in the past.

Among the secondary goods-producing industries, employment in construction is projected to grow at a slightly more rapid rate than in the seventies. Employment in this industry is expected to grow at an average annual rate of 3.0 (low-growth) and 3.2 per cent (high-growth) over the 1981-86 period, compared to an average annual growth rate of 2.9 per cent in the seventies. However, this growth is contingent upon the realization of the energy-related investment projects in the West. Employment growth in manufacturing is projected to stabilize at an average annual rate of 1.4 (low-growth) and 1.8 per cent (high-growth) between 1981 and 1986. The manufacturing industry experienced a sharp decline from an average growth rate of 2.4 per cent in the sixties to 1.8 per cent in the seventies. Employment in utilities is projected to grow less rapid during this period than in the seventies.

Between 1981 and 1986 employment is projected to grow very little in most primary goods-producing industries except mining, in which a moderate gain in employment is expected during this period.

As a consequence of the changes in the growth rate for the various industries, the following shifts in the contribution of each individual sector to total employment growth are expected to occur between 1981 and 1986.

- The secondary goods-producing industries will contribute a larger share to the total employment growth during this period, than in the past decade. These industries together are projected to account for between 21.1 (low-growth) and 22.6 per cent (high-growth) of the total increase over the 1981-86 period compared to that of 18.8 per cent in the seventies.

TABLE 6

PROJECTIONS OF EMPLOYMENT BY INDUSTRY:

CANADA, 1981 TO 1986

(000'S)

INDUSTRY	ACTUAL 1980	LOW-GROWTH SCENARIO						MEDIUM-GROWTH SCENARIO						HIGH-GROWTH SCENARIO					
		1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986
PRIMARY GOODS																			
Agriculture/Fishing	511	511	504	500	497	494	493	514	508	506	504	501	501	515	510	508	507	505	505
Forestry	70	70	70	70	69	70	70	71	71	71	70	71	71	71	72	72	71	72	72
Mining	192	199	204	210	214	222	230	202	207	213	218	226	233	202	210	216	222	230	238
SECONDARY GOODS																			
Manufacturing	2104	2140	2157	2184	2206	2243	2289	2157	2180	2208	2240	2278	2324	2168	2193	2224	2254	2295	2347
Construction	619	628	640	663	686	719	738	632	645	669	694	727	746	639	649	670	695	728	748
Utilities	123	127	130	133	138	142	146	128	130	135	139	143	148	128	131	135	139	144	149
SERVICES-PRODUCING																			
Transportation/Communications	777	797	809	827	843	860	879	802	816	835	852	871	890	805	821	840	858	878	898
Trade	1831	1913	1967	2036	2114	2193	2293	1921	1981	2056	2144	2227	2330	1931	1986	2058	2144	2229	2336
Finance	609	645	669	703	736	765	790	646	671	704	739	769	794	646	674	709	744	774	801
Services	3079	3180	3222	3304	3374	3425	3460	3181	3229	3310	3389	3443	3480	3185	3240	3326	3403	3461	3503
Public Administration	740	751	765	780	792	804	817	751	765	780	792	804	817	751	765	780	792	804	817
TOTAL	10655	10962	11137	11409	11671	11937	12206	11004	11203	11485	11781	12059	12335	11039	11248	11538	11828	12120	12411

TABLE 7

TOTAL AND ANNUAL NET CHANGE IN EMPLOYMENT BY INDUSTRY:

CANADA, 1981 TO 1986

INDUSTRY	ACTUAL EMPLOYMENT 1980	LOW-GROWTH SCENARIO				MEDIUM-GROWTH SCENARIO				HIGH-GROWTH SCENARIO			
		TOTAL NET CHANGE IN EMPLOYMENT 1981-1986	PROJECTED ANNUAL NET CHANGE IN EMPLOYMENT 1981-1986		ANNUAL NET CHANGE IN EMPLOYMENT AS A % OF 1980 EMPLOYMENT	TOTAL NET CHANGE IN EMPLOYMENT 1981-1986	PROJECTED ANNUAL NET CHANGE IN EMPLOYMENT 1981-1986		ANNUAL NET CHANGE IN EMPLOYMENT AS A % OF 1980 EMPLOYMENT	TOTAL NET CHANGE IN EMPLOYMENT 1981-1986	PROJECTED ANNUAL NET CHANGE IN EMPLOYMENT 1981-1986		ANNUAL NET CHANGE IN EMPLOYMENT AS A % OF 1980 EMPLOYMENT
			NUMBER	PERCENT DISTRIB.			NUMBER	PERCENT DISTRIB.			NUMBER	PERCENT DISTRIB.	
SERVICES	3079000	381000	63500	24.6	2.1	401000	66800	23.9	2.2	424000	70700	24.1	2.3
TRADE	1831000	462000	77000	29.8	4.2	499000	83200	29.7	4.5	505000	84200	28.8	4.6
FINANCE	609000	181000	30200	11.7	5.0	185000	30800	11.0	5.1	192000	32000	10.9	5.3
MANUFACTURING	2104000	185000	30800	11.9	1.5	220000	36700	13.1	1.7	243000	40500	13.8	1.9
TRANSP./COMM.	777000	102000	17000	6.6	2.2	113000	18800	6.7	2.4	121000	20200	6.9	2.6
CONSTRUCTION	619000	119000	19800	7.7	3.2	127000	21200	7.6	3.4	129000	21500	7.3	3.5
UTILITIES	123000	23000	3800	1.5	3.1	25000	4200	1.5	3.4	26000	4300	1.5	3.5
PUBLIC ADMIN.	740000	77000	12800	5.0	1.7	77000	12800	4.6	1.7	77000	12800	4.4	1.7
FORESTRY	70000	0	0	0.0	0.0	1000	200	0.1	0.2	2000	300	0.1	0.5
MINING	192000	38000	6300	2.5	3.3	41000	6800	2.4	3.6	46000	7700	2.6	4.0
AGRICULTURE/ FISHING	511000	-18000	-3000	-1.2	-0.6	-10000	-1700	-0.6	-0.3	-6000	-1000	-0.3	-0.2
TOTAL	10655000	1551000	258500	100.0	2.4	1680000	280000	100.0	2.6	1756000	292700	100.0	2.7

TABLE 8

INDUSTRIAL COMPOSITION OF EMPLOYMENT GROWTH:

CANADA, 1971 TO 1986

Industry	Average Annual Rate of Change in Employment (%)				Percentage Contribution of Total Employment Growth			
	Historical	Projected: 1981-86			Historical	Projected: 1981-86		
	1971-80[a]	Low-Growth	Medium Growth	High-Growth	1971-80[a]	Low-Growth	Medium-Growth	High-Growth
Primary Goods-Producing Industries	1.3	0.4	0.7	0.9	2.2	1.3	1.9	2.4
Agriculture/Fishing	-0.2	-0.6	-0.3	-0.2	-0.1	-1.2	-0.6	-0.3
Forestry	0.5	0.0	0.2	0.5	-0.04	0.0	0.1	0.1
Mining	4.5	3.1	3.3	3.6	2.4	2.5	2.4	2.6
Secondary Goods-Producing Industries	2.1	1.8	2.1	2.2	18.8	21.1	22.1	22.6
Manufacturing	1.8	1.4	1.7	1.8	12.6	11.9	13.1	13.8
Construction	2.9	3.0	3.2	3.2	4.8	7.7	7.6	7.3
Utilities	3.9	2.9	3.1	3.2	1.4	1.5	1.5	1.5
Services-Producing Industries	4.0	2.7	2.8	2.9	79.0	77.6	76.0	75.0
Transpotation/Communications	2.6	2.1	2.3	2.4	6.2	6.6	6.7	6.9
Trade	3.5	3.8	4.1	4.1	19.3	29.8	29.7	28.8
Finance	5.3	4.4	4.6	4.7	8.3	11.7	11.0	10.9
Services	4.4	2.0	2.1	2.2	36.8	24.6	23.9	24.1
Public Administration	4.4	1.7	1.7	1.7	8.3	5.0	4.6	4.4
Total	3.2	2.3	2.5	2.6	100.0	100.0	100.0	100.0

[a]Data calculated from revised Labour Force Survey

- The contribution to the total growth by the services-producing industries is expected to decline from 79 per cent in the seventies to between 78 (low-growth) and 75 per cent (high-growth) over the projection period.

- The contribution of the primary goods-producing industries to total growth is expected to decline slightly from 2.2 per cent in the seventies to 1.9 per cent (medium-growth) between 1981 and 1986.

- In terms of individual industry sectors, community, business and personal services, and trade are projected to continue to provide the largest share (about between 53 and 54 per cent) of the total increase over the 1981-86 period. These industry sectors together accounted for slightly over 56 per cent of the total growth in the past decade.

- Manufacturing is projected to account for between 11.9 per cent (low-growth) and 13.8 per cent (high-growth) of the total increase over the 1981-86 period compared to that of 12.6 per cent in the 1970's.

In summary, total employment in Canada is projected to increase by 280,000 per year in the medium-growth scenario between 1981 and 1986. About 67 per cent of the total growth is expected to occur in trade, community, business and personal services, and manufacturing, averaging yearly 186,700. The balance of the total growth will be contributed by finance (30,800), construction (21,200), transportation and communication (18,800), public administration (12,800), mining (6,800) and utilities (4,200).

4. Provincial Employment Projections, 1981 to 1986

Projections of provincial employment were made, using the Industry-Ontario model, by applying the Ontario proportion of national employment to the projection of national employment by industry. The sum of the projections of employment in all industries gives an estimate of the projections of total

employment for Ontario. (Projections of total employment and the annual net change in employment by industry for Ontario between 1981 and 1986 appear in Tables 9 and 10).

4.a. Total Employment in Ontario

The total employment in Ontario between 1981 and 1986 is projected to grow more slowly than it did in the previous decade. Between 1981 and 1986 total employment is projected to increase by 102,000 per year in the low-growth scenario and 115,300 per year in the high-growth scenario. These projections imply an average annual rate of employment growth of 2.4 (low-growth) and 2.7 per cent (high-growth), rates which are much lower than the 3.2 per cent growth rate experienced in the seventies.

Under the medium-growth scenario, employment in Ontario in 1981 is projected to increase by 124,000 (or 3.0 per cent) which is much higher than the net increase in employment of 58,000 in 1980[3]. In 1982 employment is projected to increase by 88,000 or 2.1 per cent in the medium-growth scenario. The rate of growth in employment is expected to be relatively strong in 1983 and 1984, but it is projected to decline slightly in 1985 and 1986 (see Appendix IX).

4.b. Employment by Industry in Ontario

These projections suggest that Ontario's employment structure will continue to shift as in the past.

Among the services-producing industries, finance, community, business and personal services, public administration, and trade were the leading sectors contributing to growth in employment in the seventies. Between 1981 and 1986 trade and finance are projected to continue as the fastest growing sectors, but employment in the community, business and

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[3] The latest short-term forecast for the Ontario economy was made available by the Conference Board of Canada in August, 1981. The forecast indicated that employment in Ontario would rise from 4,066,000 to 4,187,000 in 1981, a net increase of approximately 121,000. In the 1981 Ontario Budget the Minister of Treasury and Economics projected employment in Ontario in 1981 will increase by 106,000 to 4,172,000.

TABLE 9

PROJECTIONS OF EMPLOYMENT BY INDUSTRY:

ONTARIO, 1981 TO 1986

(000'S)

INDUSTRY	ACTUAL 1980	LOW-GROWTH SCENARIO						MEDIUM-GROWTH SCENARIO						HIGH-GROWTH SCENARIO					
		1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986
PRIMARY GOODS																			
Agriculture/Fishing	144	141	140	139	137	136	136	142	141	140	139	138	138	142	142	141	140	139	139
Forestry	9	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	10	10
Mining	50	51	52	54	55	57	59	52	53	55	56	58	60	52	54	56	57	59	61
SECONDARY GOODS																			
Manufacturing	1013	1025	1038	1055	1067	1084	1109	1036	1050	1068	1080	1099	1125	1039	1057	1076	1089	1111	1134
Construction	223	222	220	224	229	239	244	224	221	226	232	241	247	226	223	227	232	242	248
Utilities	52	53	54	54	56	57	59	53	54	55	56	58	60	53	54	55	56	58	60
SERVICES-PRODUCING																			
Transportation/Communications	254	257	260	267	273	280	286	258	263	269	276	283	290	258	264	271	277	285	293
Trade	666	693	722	753	786	816	855	696	727	761	797	828	869	700	729	762	797	829	871
Finance	252	264	277	285	295	306	316	264	278	286	296	307	318	264	279	288	298	310	320
Services	1138	1189	1208	1245	1279	1301	1318	1190	1211	1248	1285	1308	1326	1191	1215	1254	1290	1315	1335
Public Administration	265	268	271	276	279	283	287	268	271	276	279	283	287	268	271	276	279	283	287
TOTAL	4067	4174	4253	4363	4465	4569	4679	4191	4279	4393	4508	4616	4729	4205	4297	4414	4527	4641	4759

TABLE 10

TOTAL AND ANNUAL NET CHANGE IN EMPLOYMENT BY INDUSTRY: ONTARIO, 1981 TO 1986

INDUSTRY	ACTUAL EMPLOYMENT 1980	LOW-GROWTH SCENARIO				MEDIUM-GROWTH SCENARIO				HIGH-GROWTH SCENARIO			
		TOTAL NET CHANGE IN EMPLOYMENT 1981-1986	PROJECTED ANNUAL NET CHANGE IN EMPLOYMENT 1981-1986		ANNUAL NET CHANGE IN EMPLOYMENT AS A % OF 1980 EMPLOYMENT	TOTAL NET CHANGE IN EMPLOYMENT 1981-1986	PROJECTED ANNUAL NET CHANGE IN EMPLOYMENT 1981-1986		ANNUAL NET CHANGE IN EMPLOYMENT AS A % OF 1980 EMPLOYMENT	TOTAL NET CHANGE IN EMPLOYMENT 1981-1986	PROJECTED ANNUAL NET CHANGE IN EMPLOYMENT 1981-1986		ANNUAL NET CHANGE IN EMPLOYMENT AS A % OF 1980 EMPLOYMENT
			NUMBER	PERCENT DISTRIB.			NUMBER	PERCENT DISTRIB.			NUMBER	PERCENT DISTRIB.	
SERVICES	1138000	180000	30000	29.4	2.6	188000	31300	28.4	2.8	197000	32800	28.5	2.9
TRADE	666000	189000	31500	30.9	4.7	203000	33800	30.7	5.1	205000	34200	29.6	5.1
FINANCE	252000	64000	10700	10.5	4.2	66000	11000	10.0	4.4	68000	11300	9.8	4.5
MANUFACTURING	1013000	96000	16000	15.7	1.6	112000	18700	16.9	1.8	121000	20200	17.5	2.0
TRANSP./COMM.	254000	32000	5300	5.2	2.1	36000	6000	5.4	2.4	39000	6500	5.6	2.6
CONSTRUCTION	223000	21000	3500	3.4	1.6	24000	4000	3.6	1.8	25000	4200	3.6	1.9
UTILITIES	52000	7000	1200	1.1	2.2	8000	1300	1.2	2.6	8000	1300	1.2	2.6
PUBLIC ADMIN.	265000	22000	3700	3.6	1.4	22000	3700	3.3	1.4	22000	3700	3.2	1.4
FORESTRY	9000	1000	200	0.2	1.9	1000	200	0.2	1.9	1000	200	0.1	1.9
MINING	50000	9000	1500	1.5	3.0	10000	1700	1.5	3.3	11000	1800	1.6	3.7
AGRICULTURE/ FISHING	144000	-8000	-1300	-1.3	-0.9	-6000	-1000	-0.9	-0.7	-5000	-800	-0.7	-0.6
TOTAL	4067000	612000	132000	100.0	2.5	662000	110300	100.0	2.7	692000	115300	100.0	2.8

personal services, and public administration is expected to grow at a much slower pace than in the past decade (see Table 11).

Employment in the secondary goods-producing industries in Ontario is projected to grow more slowly than in the seventies. This is contrary to the growth pattern projected at the national level at which a similar rate of growth as in the seventies is projected for these industries. Employment in the construction industry in Ontario is projected to increase moderately at an annual rate of 1.5 (low-growth) and 1.8 per cent (high-growth) over the projection period compared to an annual rate of 1.9 per cent experienced in the seventies. Employment in manufacturing is projected to grow at an average annual rate of 1.5 (low-growth) and 1.9 per cent (high-growth) between 1981 and 1986, rates which are much below the rate of 2.3 per cent experienced in the seventies. Employment growth in utilities is projected to decline from an average annual rate of 3.9 per cent in the seventies to between 2.1 (low-growth) and 2.4 per cent (high-growth) over the projection period.

Of the primary goods-producing industries, employment in mining is expected to grow strongly at an annual rate of 2.8 (low-growth) and 3.4 per cent (high-growth) between 1981 and 1986. It grew only at an average rate of 0.7 per cent in the past decade. Employment in other primary industries including agriculture, fishing and forestry, is expected either to decline slightly or to gain marginally over the projection period.

As the result of changing industrial growth, the industrial contribution to overall employment growth in Ontario is expected to shift as follows:

- The services-producing industries will continue to contribute a larger share to total growth between 1981 and 1986. They are projected to account for between 79 (low-growth) and 77 per cent (high-growth) of the total increase during this period compared to that of 75.7 per cent experienced in the seventies.

- The contribution of the secondary goods-producing industries to the total growth is expected to decline from 22.6 per cent in the seventies to between 20 (low-growth) and 22 per cent (high-growth) over the 1981-86 period.

TABLE 11

INDUSTRIAL COMPOSITION OF EMPLOYMENT GROWTH:

ONTARIO, 1971 TO 1986

Industry	Average Annual Rate of Change in Employment (%)				Percentage Contribution of Total Employment Growth			
	Historical	Projected: 1981-86			Historical	Projected: 1981-86		
	1971-80[a]	Low-Growth	Medium Growth	High-Growth	1971-80[a]	Low-Growth	Medium-Growth	High-Growth
Primary Goods-Producing Industries	1.1	0.2	0.4	0.7	1.7	0.4	0.8	1.0
Agriculture/Fishing	1.5	-0.9	-0.7	-0.6	1.5	-1.3	-0.9	-0.7
Forestry	0.7	2.0	2.0	2.0	-0.1	0.2	0.2	0.1
Mining	0.7	2.8	3.1	3.4	0.3	1.5	1.5	1.6
Secondary Goods-Producing Industries	2.4	1.5	1.7	1.9	22.6	20.2	21.7	22.3
Manufacturing	2.3	1.5	1.8	1.9	17.8	15.7	16.9	17.5
Construction	1.9	1.5	1.7	1.8	3.3	3.4	3.6	3.6
Utilities	3.9	2.1	2.4	2.4	1.4	1.1	1.2	1.2
Services-Producing Industries	4.1	2.9	3.1	3.2	75.7	79.4	77.6	76.7
Transpotation/Communications	3.3	2.0	2.2	2.4	6.2	5.2	5.4	5.6
Trade	3.8	4.3	4.5	4.6	18.4	30.9	30.7	29.6
Finance	5.0	3.8	4.0	4.1	8.7	10.5	10.0	9.8
Services	4.5	2.5	2.6	2.7	36.2	29.4	28.4	28.5
Public Administration	3.1	1.3	1.3	1.3	6.2	3.6	3.3	3.2
Total	3.3	2.4	2.5	2.7	100.0	100.0	100.0	100.0

[a]Data calculated from revised Labour Force Survey

- The overall contribution of the primary goods-producing industries to the total growth is projected to decline slightly between 1981 and 1986. However, the mining sector is expected to account for a significantly larger share (about 1.5 per cent) of the total growth during this period compared to the 0.3 per cent in the past decade.

- In terms of individual industry sectors, trade, and community, business and personal services are expected to account for the largest share of the projected total increase. The trade, and community, business and personal services together are projected to account for slightly over 59 per cent (medium-growth) of the total increase between 1981 and 1986. They accounted for 54.6 per cent of the total growth in the seventies. Much of this growth came from the trade sector.

- The contribution of manufacturing to the total employment growth is expected to decline. Manufacturing accounted for 17.8 per cent of the total employment growth in the seventies and is expected to account for between 15.7 (low-growth) and 17.5 per cent (high-growth) of the projected total increase over the 1981-86 period. It should be noted that the manufacturing industry is also expected to account for a steadily declining share of total employment in Ontario because of the projected slower rate of growth. This industry employed 27.3 per cent of total work force in Ontario in 1971 and 24.9 per cent in 1980 and is expected to account for only 23.8 per cent by 1986.

In summary, total employment in Ontario is projected to increase by 110,300 per year (2.5 per cent) in the medium-growth scenario between 1981 and 1986. Trade, and community, business and personal services together are expected to account for 65,100, while manufacturing is expected to account for 18,700. The balance of the total growth will be contributed by finance (11,000), transportation and communication (6,000), construction (4,000), public administration (3,700), mining (1,700) and utilities (1,300).

5. Job Openings Due to Growth and Replacement by Industry for White- and Blue-Collar Occupations: Ontario[4]

The number of job openings that become available in an occupation is the sum of the net change in employment and the replacement needs resulting from retirement, deaths, and inter-occupational and inter-regional mobility. Since no data are currently available on job openings due to inter-occupational and inter-regional mobility, the estimates of replacement needs presented in this report include only the number of jobs that will become available because of retirements and deaths in the work force. Projections of job openings due to retirement were made by "aging" the employed labour force year by year and assuming that workers will retire at age 65. Projections of job openings due to deaths were obtained by applying age-specific mortality rates to the 1971 Census data on the total employed labour force in the blue-collar, white-collar and other unspecified occupations by industry.[5] The estimates of job openings due to replacement needs were then adjusted based on the 1976 Census data in order to account for attritions to additions to the work force between 1971 and 1976.[6]

The projections of annual job openings due to net change in employment in each industry between 1981 and 1986 were also broken down into blue- and white-collar occupations on the basis of the 1971 Census data for Ontario, which provided data on employment by industry and occupation. It

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[4]For the purposes of this report, white-collar occupations are broadly defined to include managerial, the professional, clerical, sales and some services occupations. Blue-collar occupations are defined to include occupations in processing, machining, product fabricating, construction, transportation equipment, other crafts, farming, fishing, mining and some services.

[5]Other unspecified occupations are defined to include occupations not elsewhere classified or not stated.

[6]Because data on age-sex composition of additions to the work force after 1976 are not available, it was not possible to estimate attrition to these additions. The magnitude of replacement needs arising from attrition to these additions is expected to be small.

was assumed that the proportion of blue- and white-collar workers during the projection period will remain constant at the 1971 level.[7]

Projections of total job openings, both due to growth in employment and replacement needs, for white-collar, blue-collar and other workers by industry for each year of the projection period are presented in Appendices XII, XIII and XIV. All three scenarios are summarized in Table 12.

These projections suggest that between 1981 and 1986 there will be an average of over 161,900 job openings per year in Ontario. Roughly 56 per cent of these will be in white-collar jobs, and only 39 per cent will be in blue-collar jobs.

The projections also show that in all three scenarios growth in employment will account for a much higher proportion of job openings than replacement needs. However, growth in employment is a much greater factor in white-collar than in blue-collar job openings. In the low-growth scenario, 69.1 per cent of all white-collar job openings and only 57.2 per cent of all blue-collar job openings will be due to growth. In the medium- and high-growth scenarios these proportions increase for both white-collar and blue-collar occupations, and in the high-growth scenario as much as 71.1 per cent of the white-collar job openings and 61.2 per cent of the blue-collar job openings are due to growth.

The projections of job openings by industry show that in all three scenarios, community, business and personal services, and trade combined are expected to account for roughly 51 per cent of the total job openings over the 1981-86 period. Approximately 26 per cent of the total job openings will be in community, business and personal services, and over one-quarter will be in trade. Manufacturing is expected to account for about 20 per cent of the total job openings over the projection period. The projections of job openings by industry, given in detail in Tables 12 and 13, are discussed in more detail below:

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[7] Employment Hours and Earnings, published by Statistics Canada, provides monthly employment estimates of salaried workers and wage earners in the mining, manufacturing, and construction industries. The data show that the proportions of salaried workers in mining and construction have increased gradually since 1975, but it remained unchanged in manufacturing. This seems to suggest that the white-collar occupations are likely to be understated and blue-collar occupations overstated in industries such as mining and construction when a single-year (1971) industry-occupation matrix is used for projection.

TABLE 12

TOTAL AND ANNUAL AVERAGE JOB OPENINGS DUE TO GROWTH AND REPLACEMENT NEEDS BY INDUSTRY AND OCCUPATION GROUP: ONTARIO, 1981 TO 1986

INDUSTRY/OCCUPATION	LOW-GROWTH SCENARIO						MEDIUM-GROWTH SCENARIO						HIGH-GROWTH SCENARIO					
	TOTAL JOB OPENINGS 1981-86			TOTAL AVG. OPENINGS 1981-86			TOTAL JOB OPENINGS 1981-86			TOTAL AVG. OPENINGS 1981-86			TOTAL JOB OPENINGS 1981-86			TOTAL AVG. OPENINGS 1981-86		
	NUMBER	DUE TO GROWTH	DUE TO REPLACE'T NEEDS	NUMBER	DUE TO GROWTH	DUE TO REPLACE'T NEEDS	NUMBER	DUE TO GROWTH	DUE TO REPLACE'T NEEDS	NUMBER	DUE TO GROWTH	DUE TO REPLACE'T NEEDS	NUMBER	DUE TO GROWTH	DUE TO REPLACE'T NEEDS	NUMBER	DUE TO GROWTH	DUE TO REPLACE'T NEEDS
AGRICULTURE/FISHING	7700	-8000	15700	1300	-1300	2600	9700	-6000	15700	1600	-1000	2600	10700	-5000	15700	1800	-800	2600
WHITE-COLLAR	200	-200	400	100	0	100	200	-200	400	100	0	100	200	-200	400	100	0	100
BLUE-COLLAR	7500	-7700	15200	1200	-1300	2500	9400	-5800	15200	1500	-1000	2500	10400	-4800	15200	1700	-800	2500
OTHER	0	-100	100	0	0	0	0	-100	100	0	0	0	0	-100	100	0	0	0
FORESTRY	1700	1000	700	300	200	100	1700	1000	700	300	200	100	1700	1000	700	300	200	100
WHITE-COLLAR	200	100	100	0	0	0	200	100	100	0	0	0	200	100	100	0	0	0
BLUE-COLLAR	1600	900	700	200	100	100	1600	900	700	200	100	100	1600	900	700	200	100	100
OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MINING	13600	9000	4600	2300	1500	800	14600	10000	4600	2500	1700	800	15600	11000	4600	2600	1800	800
WHITE-COLLAR	2500	1700	800	400	300	100	2700	1900	800	400	300	100	2900	2100	800	500	400	100
BLUE-COLLAR	10600	6900	3700	1800	1200	600	11400	7700	3700	1900	1300	600	12200	8500	3700	2000	1400	600
OTHER	400	300	100	100	100	0	500	400	100	100	100	0	500	400	100	100	100	0
MANUFACTURING	187000	96000	91000	31200	16000	15200	203000	112000	91000	33900	18700	15200	212000	121000	91000	35400	20200	15200
WHITE-COLLAR	56000	28200	27800	9300	4700	4600	60800	33000	27800	10100	5500	4600	63400	35600	27800	10500	5900	4600
BLUE-COLLAR	120400	62000	58400	20000	10300	9700	130800	72400	58400	21800	12100	9700	136600	78200	58400	22700	13000	9700
OTHER	10600	5700	4900	1800	1000	800	11500	6600	4900	1900	1100	800	12000	7100	4900	2000	1200	800
CONSTRUCTION	40600	21000	19600	6800	3500	3300	43600	24000	19600	7300	4000	3300	44600	25000	19600	7500	4200	3300
WHITE-COLLAR	6100	3000	3100	1000	500	500	6500	3400	3100	1100	600	500	6600	3500	3100	1100	600	500
BLUE-COLLAR	33100	17300	15800	5500	2900	2600	35600	19800	15800	5900	3300	2600	36400	20600	15800	6000	3400	2600
OTHER	1400	700	700	200	100	100	1500	800	700	200	100	100	1600	900	700	200	100	100
UTILITIES	11400	7000	4400	1900	1200	700	12400	8000	4400	2000	1300	700	12400	8000	4400	2000	1300	700
WHITE-COLLAR	4700	3000	1700	800	500	300	5100	3400	1700	900	600	300	5100	3400	1700	900	600	300
BLUE-COLLAR	6000	3600	2400	1000	600	400	6500	4100	2400	1100	700	400	6500	4100	2400	1100	700	400
OTHER	700	400	300	100	100	0	800	500	300	100	100	0	800	500	300	100	100	0
TRANSP./COMM.	55200	32000	23200	9200	5300	3900	59200	36000	23200	9900	6000	3900	62200	39000	23200	10400	6500	3900
WHITE-COLLAR	27600	18800	8800	4600	3100	1500	29100	20300	8800	4900	3400	1500	30400	21600	8800	5100	3600	1500
BLUE-COLLAR	26300	12500	13800	4400	2100	2300	28700	14900	13800	4800	2500	2300	30400	16600	13800	5100	2800	2300
OTHER	1200	600	600	200	100	100	1300	700	600	200	100	100	1400	800	600	200	100	100
TRADE	242400	189000	53400	40400	31500	8900	256400	203000	53400	42700	33800	8900	258400	205000	53400	43100	34200	8900
WHITE-COLLAR	169400	129300	40100	28200	21500	6700	179000	138900	40100	29800	23100	6700	180300	140200	40100	30100	23400	6700
BLUE-COLLAR	69900	53700	12200	10900	8900	2000	69900	57700	12200	11600	9600	2000	70400	58200	12200	11700	9700	2000
OTHER	7100	6000	1100	1200	1000	200	7600	6500	1100	1300	1100	200	7700	6600	1100	1300	1100	200

TABLE 12 (Cont'd.)

INDUSTRY/OCCUPATION	LOW-GROWTH SCENARIO						MEDIUM-GROWTH SCENARIO						HIGH-GROWTH SCENARIO					
	TOTAL JOB OPENINGS 1981-86			TOTAL AVG. OPENINGS 1981-86			TOTAL JOB OPENINGS 1981-86			TOTAL AVG. OPENINGS 1981-86			TOTAL JOB OPENINGS 1981-86			TOTAL AVG. OPENINGS 1981-86		
	NUMBER	DUE TO GROWTH	DUE TO REPLACE'T NEEDS	NUMBER	DUE TO GROWTH	DUE TO REPLACE'T NEEDS	NUMBER	DUE TO GROWTH	DUE TO REPLACE'T NEEDS	NUMBER	DUE TO GROWTH	DUE TO REPLACE'T NEEDS	NUMBER	DUE TO GROWTH	DUE TO REPLACE'T NEEDS	NUMBER	DUE TO GROWTH	DUE TO REPLACE'T NEEDS
FINANCE	78200	64000	14200	13100	10700	2400	80200	66000	14200	13400	11000	2400	82200	68000	14200	13700	11300	2400
WHITE-COLLAR	70300	58000	12300	11800	9700	2100	72100	59800	12300	12100	10000	2100	73900	61600	12300	12400	10300	2100
BLUE-COLLAR	6500	4900	1600	1100	800	300	6700	5100	1600	1100	800	300	6800	5200	1600	1200	900	300
OTHER	1400	1100	300	200	200	0	1400	1100	300	200	200	0	1500	1200	300	200	200	0
SERVICES	260100	180000	80100	43400	30000	13400	268100	188000	80100	44700	31300	13400	277100	197000	80100	46200	32800	13400
WHITE-COLLAR	166300	117500	48800	27700	19600	8100	171600	122800	48800	28600	20500	8100	177400	128600	48800	29500	21400	8100
BLUE-COLLAR	87500	58000	29500	14600	9700	4900	90000	60500	29500	15000	10100	4900	92900	63400	29500	15500	10600	4900
OTHER	6300	4500	1800	1100	800	300	6500	4700	1800	1100	800	300	6700	4900	1800	1100	800	300
PUBLIC ADMIN.	54100	22000	32100	9000	3700	5300	54100	22000	32100	9000	3700	5300	54100	22000	32100	9000	3700	5300
WHITE-COLLAR	39000	16300	22700	6500	2700	3800	39000	16300	22700	6500	2700	3800	39000	16300	22700	6500	2700	3800
BLUE-COLLAR	12700	4800	7900	2100	800	1300	12700	4800	7900	2100	800	1300	12700	4800	7900	2100	800	1300
OTHER	2500	1000	1500	400	200	200	2500	1000	1500	400	200	200	2500	1000	1500	400	200	200
UNSPECIFIED INDUST.	20300	0	20300	3400	0	3400	20300	0	20300	3400	0	3400	20300	0	20300	3400	0	3400
WHITE-COLLAR	1000	0	1000	200	0	200	1000	0	1000	200	0	200	1000	0	1000	200	0	200
BLUE-COLLAR	900	0	900	200	0	200	900	0	900	200	0	200	900	0	900	200	0	200
OTHER	18300	0	18300	3100	0	3100	18300	0	18300	3100	0	3100	18300	0	18300	3100	0	3100
TOTAL	971200	612000	359200	161900	102000	59900	1021200	662000	359200	170200	110300	59900	1051200	692000	359200	175200	115300	59900
WHITE-COLLAR	542500	374900	167600	90400	62500	27900	566200	398600	167600	94300	66400	27900	580700	413100	167600	96700	68800	27900
BLUE-COLLAR	378800	216900	161900	63100	36100	27000	403500	241600	161900	67300	40300	27000	417600	255700	161900	69600	42600	27000
OTHER	49900	20200	29700	8300	3400	4900	51500	21800	29700	8500	3600	4900	53000	23300	29700	8800	3900	4900

TABLE 13

ANNUAL AVERAGE REPLACEMENT NEEDS AS A PERCENTAGE OF TOTAL JOB OPENINGS BY INDUSTRY AND OCCUPATION GROUP: ONTARIO, 1981 TO 1986

INDUSTRY/OCCUPATION	LOW-GROWTH SCENARIO	MEDIUM-GROWTH SCENARIO	HIGH-GROWTH SCENARIO
AGRICULTURE/FISHING	-	-	-
WHITE-COLLAR	-	-	-
BLUE-COLLAR	-	-	-
OTHER	-	-	-
FORESTRY	42.5	42.5	42.5
WHITE-COLLAR	40.4	40.4	40.4
BLUE-COLLAR	42.9	42.9	42.9
OTHER	33.3	33.3	33.3
MINING	33.7	31.4	29.4
WHITE-COLLAR	30.5	28.3	26.4
BLUE-COLLAR	34.6	32.3	30.2
OTHER	30.2	28.0	26.1
MANUFACTURING	48.7	44.8	42.9
WHITE-COLLAR	49.6	45.7	43.8
BLUE-COLLAR	48.5	44.6	42.7
OTHER	45.8	42.3	40.5
CONSTRUCTION	48.2	44.9	43.9
WHITE-COLLAR	51.1	47.8	46.7
BLUE-COLLAR	47.7	44.4	43.4
OTHER	47.5	44.2	43.2
UTILITIES	38.5	35.4	35.4
WHITE-COLLAR	36.4	33.3	33.3
BLUE-COLLAR	40.0	36.9	36.9
OTHER	40.6	37.5	37.5
TRANSP./COMM.	42.0	39.2	37.3
WHITE-COLLAR	31.9	30.3	29.0
BLUE-COLLAR	52.4	48.0	45.3
OTHER	47.7	43.8	41.4
TRADE	22.0	20.8	20.7
WHITE-COLLAR	23.7	22.4	22.2
BLUE-COLLAR	18.5	17.4	17.3
OTHER	15.4	14.4	14.3
FINANCE	18.2	17.7	17.3
WHITE-COLLAR	17.6	17.1	16.7
BLUE-COLLAR	24.3	23.7	23.2
OTHER	20.5	20.0	19.6
SERVICES	30.8	29.9	28.9
WHITE-COLLAR	29.3	28.5	27.5
BLUE-COLLAR	33.7	32.8	31.8
OTHER	28.6	27.8	26.8
PUBLIC ADMINISTRATION	59.3	59.3	59.3
WHITE-COLLAR	58.3	58.3	58.3
BLUE-COLLAR	62.3	62.3	62.3
OTHER	60.3	60.3	60.3
TOTAL	37.0	35.2	34.2
WHITE-COLLAR	30.9	29.6	28.9
BLUE-COLLAR	42.7	40.1	38.8
OTHER	59.5	57.6	56.0

[a]No estimates are shown when replacements would be greater than total job openings as a result of a net decline in employment in a given industry or occupation group.

The community, business and personal services sector is expected to account for an average of 43,400 job openings per year between 1981 and 1986 in the low-growth scenario; this figure represents 27 per cent of the total annual job openings. In the high-growth scenario, this sector is expected to account for 46,200 job openings, representing 26 per cent of the total (see Table 14). More than 64 per cent of the job openings are estimated in white-collar jobs (see Table 12), of which approximately 29 per cent are expected to be created by replacement needs (see Table 13). Blue-collar jobs are expected to account for about 33 per cent of the job openings in this sector and of these approximately one-third are estimated to result from replacement needs.

The trade sector is expected to account for 40,400 and 43,100 job openings per year in the low- and high-growth scenarios respectively, representing 25 per cent of the total related job openings. In each scenario more than 70 per cent of the job openings are estimated to be white-collar jobs, of which over 22 per cent are expected to result from replacement needs. Blue-collar jobs are projected to account for about 27 per cent of the job openings in this sector and of these about 17 per cent are estimated to be generated by replacement needs.

The manufacturing sector is expected to account for 31,200 job openings per year, or approximately 19 per cent of the total job openings between 1981 and 1986 in the low-growth scenario. Roughly two-thirds of these job openings are estimated in blue-collar jobs, of which 49 per cent are expected to be created by replacement needs.

In the medium-growth scenario manufacturing is expected to account for 33,900 job openings per year, or about 20 per cent of the total job openings in Ontario. Two-thirds of these job openings are estimated for blue-collar jobs, of which 45 per cent are expected to be created by replacement needs.

In the high-growth scenario manufacturing is expected to account for 35,400 job openings per year, or about 20 per cent of the total job openings in Ontario. Two-thirds of these job openings are estimated for blue-collar jobs, of which 43 per cent are expected to be created by replacement needs.

TABLE 14

PERCENTAGE DISTRIBUTION OF TOTAL JOB OPENINGS BY INDUSTRY: ONTARIO, 1981 TO 1986

INDUSTRY	LOW-GROWTH SCENARIO	MEDIUM-GROWTH SCENARIO	HIGH-GROWTH SCENARIO
AGRICULTURE/FISHING	0.8	1.0	1.0
FORESTRY	0.2	0.2	0.2
MINING	1.4	1.4	1.5
MANUFACTURING	19.3	19.9	20.2
CONSTRUCTION	4.2	4.2	4.2
UTILITIES	1.2	1.2	1.2
TRANSP./COMM.	5.7	5.8	5.9
TRADE	25.0	25.1	24.6
FINANCE	8.1	7.9	7.8
SERVICES	26.8	26.3	26.4
PUBLIC ADMINISTRATION	5.6	5.3	5.1
UNSPECIFIED INDUSTRIES	2.1	2.0	1.9
TOTAL	100.0	100.0	100.0

All other industrial sectors are expected to account for 46,900 job openings per year in the low-growth scenario and 50,500 job openings per year in the high-growth scenario between 1981 and 1986. Within this group of industries, finance, transportation and communication, public administration, construction, and utilities combined account for 40,000 job openings in the low-growth scenario and 42,600 job openings in the high-growth scenario.

The data on the contribution of each of the industries in this group are presented in Table 12. Approximately 53 per cent of the job openings in these industries are projected to be white-collar jobs (in the medium-growth scenario). Among these white-collar jobs replacement needs are expected to account for 33 per cent. On the other hand, replacement needs for blue-collar jobs are expected to account for 55 per cent of the job openings.

6. Job Openings due to Growth and Replacement Needs by Level of Education and/or Training: Ontario

The projections of the total job openings for blue-collar and white-collar occupations by industry in Ontario were further subdivided according to the level of formal education or special vocational training normally required for working in each occupation.

The white-collar occupations were divided into four categories: occupations filled primarily by university graduates, those filled primarily by university or college graduates or certified professionals, occupations filled primarily by college graduates, and those normally not requiring university or college graduation.

For the purpose of this report, blue-collar occupations were divided into highly skilled trades, medium skilled trades, and low skilled occupations. Highly skilled trades are defined as trades requiring two years or more of special vocational training, medium skilled trades are defined as trades requiring six months to two years of such training, and low skilled occupations are defined as those requiring less than six months of special vocational training.[8]

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[8]This classification scheme was developed on the basis of the listing of individual occupations appearing in the Canadian Classification and Dictionary of Occupations (CCDO) and was further refined in consultation with training specialists in the Ministries of Education and Colleges and Universities.

The 1971 Census data for Ontario were used to calculate the proportion of total employment in each of these occupation clusters (see Appendix XV). These proportions were then applied to the projected total number of job openings for blue- and white-collar occupations. The projected total number of job openings for blue- and white-collar occupations by level of education and/or training for the three scenarios, presented in Table 15, show that there will be a total of 971,200 job openings in the low-growth scenario and 1,051,200 job openings in the high-growth scenario during the projection period. Of these, between 542,600 and 580,600 respectively (about 56 and 55 per cent) are expected for white-collar workers. A detailed breakdown of job openings within white-collar and blue-collar occupations by level of education and training follows.

White-Collar Occupations

In the low-growth scenario a total of 542,600 white-collar job openings are projected during the 1981-86 period, or about 90,400 job openings per year. Of these 90,400 job openings 7,100 are expected to be filled primarily by university graduates. Another 22,900 job openings per year can be filled either by university or college graduates or certified professionals. The number of job openings in white-collar occupations filled primarily by college graduates in Ontario is projected to be 12,000 per year. About 54 per cent of all white-collar jobs normally do not require university or college graduation, and thus the number of job openings in these jobs is projected to be 48,500 per year between 1981 and 1986.

In the medium-growth scenario a total of 566,300 white-collar job openings are projected over the 1981-86 period, or approximately 94,400 job openings per year. Of these 94,400 job openings 7,400 are expected to be filled primarily by university graduates. Another 23,900 job openings per year can be filled either by university or college graduates or certified professionals. Between 1981 and 1986 the number of job openings in white-collar occupations filled primarily by college graduates in Ontario is projected to be 12,600 per year, and the number of job openings in white-collar occupations that normally do not require college or university graduation is projected to be 50,600 per year.

TABLE 15

TOTAL JOB OPENINGS DUE TO GROWTH AND REPLACEMENT NEEDS IN WHITE-COLLAR AND BLUE-COLLAR OCCUPATIONS

BY LEVEL OF EDUCATION/TRAINING: ONTARIO, 1981 TO 1986

	1981	1982	1983	1984	1985	1986	Total 1981-86	Annual Average 1981-86
Low-Growth Scenario								
All Occupations	160,900	134,800	166,100	160,700	169,500	179,200	971,200	161,900
White-Collar Occupations	94,600	78,200	92,600	90,800	90,700	95,700	542,600	90,400
Filled by University Graduates	7,400	6,100	7,200	7,100	7,100	7,500	42,500	7,100
Filled by University or College Graduates or Certified Professionals	23,900	19,800	23,400	22,900	22,900	24,200	137,100	22,900
Filled by College Graduates	12,600	10,400	12,300	12,100	12,100	12,700	72,200	12,000
Normally not Requiring College or University Graduation	50,700	41,900	49,600	48,700	48,600	51,300	290,800	48,500
Blue-Collar Occupations	58,400	49,300	65,000	62,200	69,900	74,000	378,800	63,100
Highly Skilled Occupations	15,200	12,900	17,000	16,200	18,200	19,300	98,800	16,500
Medium Skilled Occupations	7,800	6,600	8,700	8,400	9,400	9,900	50,900	8,500
Low Skilled Occupations	35,300	29,800	39,300	37,600	42,300	44,800	229,100	38,200
Other (Unspecified) Occupations	7,900	7,200	8,500	7,800	9,000	9,500	49,900	8,300
Medium-Growth Scenario								
All Occupations	177,900	143,800	170,100	173,700	173,500	182,200	1,021,200	170,200
White-Collar Occupations	99,700	84,200	94,300	98,400	92,900	96,900	566,300	94,400
Filled by University Graduates	7,800	6,600	7,400	7,700	7,300	7,600	44,300	7,400
Filled by University or College Graduates or Certified Professionals	25,200	21,300	23,800	24,900	23,500	24,500	143,100	23,900
Filled by College Graduates	13,300	11,200	12,500	13,100	12,400	12,900	75,300	12,600
Normally not Requiring College or University Graduation	53,400	45,100	50,500	52,700	49,800	51,900	303,500	50,600
Blue-Collar Occupations	70,200	51,700	67,300	66,100	71,500	76,600	403,500	67,300
Highly Skilled Occupations	18,300	13,500	17,600	17,200	18,700	20,000	105,200	17,500
Medium Skilled Occupations	9,400	6,900	9,000	8,900	9,600	10,300	54,200	9,000
Low Skilled Occupations	42,500	31,300	40,700	40,000	43,200	46,300	244,000	40,700
Other (Unspecified) Occupations	8,000	7,900	8,500	9,200	9,100	8,700	51,400	8,600

TABLE 15 (CONT'D)

	1981	1982	1983	1984	1985	1986	Total 1981-86	Annual Average 1981-86
High-Growth Scenario								
All Occupations	191,900	147,800	173,100	171,700	179,500	187,200	1,051,200	175,200
White-Collar Occupations	106,500	84,100	96,800	97,200	95,400	100,500	580,600	96,800
Filled by University Graduates	8,300	6,600	7,600	7,600	7,500	7,900	45,400	7,600
Filled by University or College Graduates, or Certified Professionals	26,900	21,300	24,500	24,600	24,100	25,400	146,700	24,500
Filled by College Graduates	14,200	11,200	12,900	12,900	12,700	13,400	77,200	12,900
Normally not Requiring College or University Graduation	57,100	45,100	51,900	52,100	51,100	53,900	311,200	51,900
Blue-Collar Occupations	76,000	56,700	67,700	65,100	75,500	76,800	417,600	69,600
Highly Skilled Occupations	19,800	14,800	17,700	17,000	19,700	20,000	108,900	18,200
Medium Skilled Occupations	10,200	7,600	9,100	8,700	10,100	10,300	56,100	9,400
Low Skilled Occupations	46,000	34,300	40,900	39,400	45,700	46,500	252,600	42,100
Other (Unspecified) Occupations	9,400	7,000	8,600	9,400	8,700	9,900	53,000	8,800

Note: Figures may not add up to totals because of rounding.

In the high-growth scenario a total of 580,600 job openings are projected during the 1981-86 period, or approximately 96,800 job openings per year. Of these 96,800 job openings 7,600 are expected to be filled primarily by university graduates. Another 24,500 job openings per year can be filled either by university or college graduates or certified professionals. Between 1981 and 1986 the number of job openings in white-collar occupations filled primarily by college graduates in Ontario is projected to be 12,900 per year, and the number of job openings in white-collar occupations that normally do not require college or university graduation is projected to be 51,900 per year.

Blue-Collar Occupations

In the low-growth scenario a total of 378,800 job openings for blue-collar jobs are projected between 1981 and 1986, or approximately 63,100 job openings per year. Of these 63,100 job openings 16,500 are expected to be for highly skilled tradesmen (i.e., those requiring more than two years of special training). The total number of job openings for medium skilled workers (i.e., those with six months to two years of special vocational training) is projected to be approximately 8,500 per year, and the total job openings in low skilled occupations (which require less than six months of special vocational training) is projected to be about 38,200 per year during the same period.

In the medium-growth scenario a total of 403,500 job openings for blue-collar workers are projected between 1981 and 1986, or about 67,300 job openings per year. Of these 67,300 job openings 17,500 are expected to be for highly skilled tradesmen, 9,000 for medium skilled workers and 40,700 for low skilled workers.

In the high-growth scenario a total of 417,600 job openings for blue-collar workers are projected between 1981 and 1986, or approximately 69,600 job openings per year. Of these 69,600 job openings 18,200 are expected to be for highly skilled tradesmen, 9,400 for medium skilled workers, and 42,100 for low skilled workers.

CHAPTER II

LABOUR SUPPLY PROJECTIONS FOR ONTARIO, 1981 TO 1986

This chapter contains annual projections of the population, labour force participation rates and the labour force in Ontario between 1981 and 1986. It also includes projections of potential labour supply from the formal education sector, the armed forces, other training programs, interprovincial and international migration, and the household sector.

The chapter begins with an overview of the total population projection for Ontario. Next are sections summarizing the projected working-age population and its age-sex distribution, changes in the participation rates and their projected effect on the labour force, and the consequent net additions to the labour force by age and sex. The chapter concludes with a summary of projections of potential labour supply from the formal education sector, other training programs, the armed forces, interprovincial and international migration, and the household sector.

1. Total Population

The total population in Ontario is projected to increase from 8.7 million persons in 1981 to 9.1 million persons by 1986.[1] These projections are based on the 1976 Census and incorporate the following assumptions:

a. The fertility rate is assumed to decline from 1.71 per cent in 1981 to 1.68 per cent in 1986;

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[1]Unpublished data from Statistics Canada.

b. Net international migration to Ontario is assumed to be 27,000 per year during the 1981-86 period.

c. The present westward shift in population from Ontario to Alberta and British Columbia is assumed to continue through out the projection period.

In making labour force projections it is the working-age population—i.e., the population 15 years of age and above—that is of concern rather than the total population. This segment of the population is examined in greater detail below.

2. Working-Age Population

The working-age source population[2] in Ontario (hereafter referred to as the working-age population) is projected to increase from 6.5 million persons in 1980 to 7 million persons by 1986 (see Table 16). This means that during the projection period the working-age population in Ontario will not grow even half as fast (1.2 per cent) as it did between 1970 and 1975 (2.7 per cent). This slowdown was evident during the 1976-80 period when the growth rate of the working-age population decelerated to 1.9 per cent annually.

Not only will the rate of growth in the working-age population slow down, but the age composition of the working-age population will also shift markedly towards older people because of the uneven rates of growth for the various age groups (see Table 17). The two major changes in population growth rates during the 1981-86 period are as follows:

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[2]The working-age source population is defined as the non-institutional civilian population 15 years of age and over. The ratio between the actual working-age source population in 1980 (taken from Statistics Canada's Labour Force Survey) and the total working-age population projected by Statistics Canada for 1980 was calculated. This ratio was used as a constant adjustment factor to derive the working-age source population from Statistics Canada's projections of the total working-age population for the period 1981-86.

TABLE 16

WORKING-AGE POPULATION BY SEX AND AGE
ONTARIO 1975 TO 1986
('000s)

SEX AND AGE	Historical						Projected					
	1975[a]	1976[a]	1977[a]	1978[a]	1979[b]	1980[b]	1981[c]	1982[c]	1983[c]	1984[c]	1985[c]	1986[c]
Men												
15-19 Yrs	396	407	414	420	421	418	407	394	376	360	348	342
20-24 Yrs	354	362	373	384	393	402	413	419	425	426	422	411
25-34 Yrs	623	642	658	672	684	697	717	725	738	754	772	792
35-44 Yrs	476	478	484	493	503	513	526	552	574	593	611	628
45-54 Yrs	456	460	461	462	461	460	458	457	456	456	455	456
55-64 Yrs	324	333	343	352	359	367	376	384	394	402	406	409
65+ Yrs	286	294	303	313	323	332	338	344	349	355	365	375
Total	2915	2976	3037	3095	3144	3189	3235	3275	3312	3346	3379	3413
Women												
15-19 Yrs	384	392	398	403	404	400	389	378	361	345	334	328
20-24 Yrs	365	374	382	389	395	398	405	409	413	414	411	400
25-34 Yrs	628	649	668	685	701	717	737	744	753	764	778	792
35-44 Yrs	470	475	482	492	504	515	528	555	579	599	618	637
45-54 Yrs	466	468	466	465	462	460	458	456	455	457	458	461
55-64 Yrs	345	357	370	383	394	404	415	424	435	442	446	447
65+ Yrs	381	393	407	420	435	451	464	476	488	501	519	539
Total	3039	3108	3174	3238	3295	3346	3396	3442	3484	3522	3564	3604
Both Sexes												
15-19 Yrs	780	799	812	822	825	818	796	772	737	705	682	670
20-24 Yrs	719	736	755	773	788	800	818	828	838	840	833	811
25-34 Yrs	1251	1291	1327	1357	1385	1415	1454	1469	1491	1518	1550	1584
35-44 Yrs	946	953	966	985	1007	1028	1054	1107	1153	1192	1229	1265
45-54 Yrs	921	927	927	927	923	920	916	913	911	913	913	917
55-64 Yrs	669	691	713	735	754	771	791	808	829	844	852	856
65+ Yrs	667	687	710	733	758	783	802	820	837	856	884	914
Total	5954	6084	6210	6333	6439	6535	6631	6717	6796	6868	6943	7017

Sources: a. Statistics Canada, Labour Force Annual Averages, 1975 - 1978, Cat. No. 71-529 (Ottawa: Occasional)
b. Statistics Canada, The Labour Force, Cat. No. 71-001 (Ottawa: Monthly, December 1979 and December 1980)
c. Derived from unpublished data from Statistics Canada

TABLE 17

GROWTH RATES OF THE WORKING-AGE POPULATION BY SEX AND AGE:
ONTARIO, 1970 TO 1975, 1976 TO 1980, AND 1981 TO 1986

(PERCENT)

SEX AND AGE	Historical		Projected
	1970 to 1975	1976 to 1980	1981 to 1986
Men			
15-19 Yrs	2.9	1.1	-3.3
20-24 Yrs	3.1	2.6	0.4
25-34 Yrs	5.3	2.3	2.2
35-44 Yrs	0.6	1.5	3.4
45-54 Yrs	2.5	0.2	-0.2
55-64 Yrs	1.9	2.5	1.8
65+ Yrs	2.1	3.0	2.1
Total	2.7	1.8	1.1
Women			
15-19 Yrs	2.6	0.8	-3.3
20-24 Yrs	2.6	1.8	0.1
25-34 Yrs	5.2	2.7	1.7
35-44 Yrs	0.4	1.8	3.6
45-54 Yrs	2.2	-0.3	0.0
55-64 Yrs	2.3	3.2	1.7
65+ Yrs	3.1	3.4	3.0
Total	2.7	1.9	1.3
Both Sexes			
15-19 Yrs	2.8	1.0	-3.3
20-24 Yrs	2.8	2.2	0.2
25-34 Yrs	5.3	2.5	1.9
35-44 Yrs	0.5	1.7	3.5
45-54 Yrs	2.4	0.0	-0.1
55-64 Yrs	2.1	2.9	1.8
65+ Yrs	2.7	3.3	2.6
Total	2.7	1.9	1.2

- The population in all age groups is expected to experience a decline in the rate of growth, except the 35-to-44 age group which will experience an increase. The average annual rate of growth for population in the 35-to-44 age group is projected to be 3.5 per cent between 1981 and 1986. This represents a sevenfold increase from 0.5 per cent experienced during 1970 and 1975 and more than double the increase experienced during 1976 and 1980.

- For the first time the population in the 15-to-19 age group is projected to experience a decline in its absolute size. This age group had the second highest growth rate (2.8 per cent) between 1970 and 1975, but between 1976 and 1980 this rate decreased to 1.0 per cent. Between 1981 and 1986, the 15-to-19 age group is projected to experience a net decline at an average annual rate of 3.3 per cent.

The projected age-sex distribution of the working-age population is presented in Table 18. The shifts in the growth of the different age groups discussed above will affect the age distribution of the working-age population in the following manner:

- The prime-age group (25-to-44) and those 55 years old and over are projected to form an increasingly high proportion of the working-age population during the 1981-86 period. Their combined share is projected to increase from 61.8 per cent in 1980 to 65.8 per cent in 1986, i.e. an increase of 4.0 per cent. Those in the 35-to-44 age bracket would account for 2.1 per cent of this increase.

- Between 1981 and 1986 persons 15-to-24 years old will form a steadily declining part of the working-age population. This decline will be quite marked for those 15-to-19 years old, whose share of the total working-age population will drop from 12.0 per cent in 1981 to 9.5 per cent in 1986.

TABLE 18

PERCENTAGE DISTRIBUTION OF THE WORKING-AGE POPULATION BY SEX AND AGE:

ONTARIO, 1970, 1975, 1980, 1981 AND 1986

SEX AND AGE	Historical			Projected	
	1970	1975	1980	1981	1986
Men					
15-19 Yrs	6.6	6.7	6.4	6.1	4.9
20-24 Yrs	5.9	6.0	6.2	6.2	5.9
25-34 Yrs	9.5	10.5	10.7	10.8	11.3
35-44 Yrs	8.9	8.0	7.8	7.9	8.9
45-54 Yrs	7.7	7.7	7.0	6.9	6.5
55-64 Yrs	5.7	5.4	5.6	5.7	5.8
65+ Yrs	4.9	4.8	5.1	5.1	5.3
Total	49.1	49.0	48.8	48.7	48.6
Women					
15-19 Yrs	6.4	6.5	6.1	5.9	4.7
20-24 Yrs	6.1	6.1	6.1	6.1	5.7
25-34 Yrs	9.5	10.6	11.0	11.1	11.3
35-44 Yrs	8.8	7.9	7.9	8.0	9.1
45-54 Yrs	7.9	7.8	7.0	6.9	6.6
55-64 Yrs	5.8	5.8	6.2	6.3	6.4
65+ Yrs	6.4	6.4	6.9	7.0	7.7
Total	50.9	51.0	51.2	51.3	51.4
Both Sexes					
15-19 Yrs	13.0	13.1	12.5	12.0	9.5
20-24 Yrs	12.0	12.1	12.2	12.3	11.5
25-34 Yrs	18.9	21.0	21.7	21.9	22.6
35-44 Yrs	17.6	15.9	15.7	15.9	18.0
45-54 Yrs	15.6	15.5	14.1	13.8	13.0
55-64 Yrs	11.5	11.2	11.8	11.9	12.2
65+ Yrs	11.3	11.2	12.0	12.1	13.0
Total	100.0	100.0	100.0	100.0	100.0

- The population in the 45-to-54 age group will decline from 13.8 per cent of the total working-age population in 1981 to 13.0 per cent in 1986.

In short, the changing age composition of the working-age population will produce an increasingly "older" population, which in turn will be reflected in the composition of the labour force.

3. Labour Force Participation Rates

In order to obtain labour force projections we need to know not only the projected working-age population but also the proportion of the population that will participate in the labour force. Participating in the labour force means either working or actively looking for work, and different age-sex groups in the working-age population participate in the labour force to varying degrees. The participation rate for any age-sex group is defined as the proportion of the population in that group who are members of the labour force.

In this section three sets of projections of the labour force participation rates by sex and age for the years 1981 to 1986 are presented.[3] Projection I is based on the assumption that the increase in the labour force participation rates for the various age-sex groups over the projection period will be slightly lower than the increase experienced over the last five years.

Projection II is based on the assumption that past trends will continue and that the average annual increase in the labour force participation rate for each age-sex group in the 1981-86 period will be similar to that experienced during the last five years. Projection III assumes a slightly higher rate of increase in the participation rates than in the past.

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[3]Labour force participation decisions of those in the working-age population depend on a wide variety of economic and sociological factors. These factors have been comprehensively described and intensively examined in a study released by the Department of Finance (see D. Ciuriak and H. Sims, Participation Rate and Labour Force Growth in Canada, Department of Finance, April 1980).

The overall labour force participation rate in Ontario is projected to increase from 66.8 per cent in 1980 to 68.4 per cent in 1986 in Projection I, to 70.8 per cent in Projection II, and to 71.9 per cent in Projection III.

The overall female participation rate is projected to increase from 54.3 per cent in 1980 to 57.0 per cent in 1986 in Projection I, to 60.3 per cent in Projection II, and to 61.7 per cent in Projection III.

The overall male participation rate is projected to increase from 79.9 per cent in 1980 to 80.5 per cent in 1986 in Projection I, to 81.8 per cent in Projection II, and to 82.6 per cent in Projection III.

The detailed projections of the participation rates by age and sex are presented in Tables 19 and 20.

4. Labour Force

The size of the labour force is determined by the size of the working-age population and the labour force participation rates. Historical data on the labour force for Ontario for the years 1975 to 1980 are presented in Table 21. By applying the three sets of projections of the labour force participation rates to the working-age population, three sets of projections of the labour force were obtained. These projections are presented in Table 22, and the related growth rates are shown in Table 23.

The labour force in Ontario grew at an average annual rate of 3.8 per cent between 1970 and 1975 and 2.7 per cent between 1976 and 1980. However, in Projection III in which the participation rates are projected to increase to unprecedented levels, the labour force in Ontario is projected to increase at an average annual rate of only 2.4 per cent between 1981 and 1986. In other words, even these higher participation rates would not be adequate to offset the slowdown in the growth of the working-age population.

In Projection II, where past trends in participation rates are expected to continue, the labour force is projected to grow at an average annual rate of 2.2 per cent between 1981 and 1986, and in Projection I, it is projected to grow at only 1.6 per cent. Therefore, in all three projections, the rate of growth in the labour force is expected to slow down throughout the

TABLE 19

LABOUR FORCE PARTICIPATION RATES BY SEX AND AGE:
ONTARIO, 1975 TO 1980

(PERCENT)

SEX & AGE	1975[a]	1976[a]	1977[a]	1978[a]	1979[b]	1980[b]
Men						
15-19 Yrs	57.0	53.1	55.0	58.3	61.3	61.0
20-24 Yrs	84.2	84.3	85.9	86.2	86.8	86.1
25-34 Yrs	96.0	96.5	96.3	96.7	96.9	96.5
35-44 Yrs	97.4	97.3	97.1	97.5	97.5	97.3
45-54 Yrs	94.1	94.9	94.0	94.9	94.5	93.9
55-64 Yrs	83.0	79.9	80.4	80.0	80.9	79.2
65+ Yrs	20.3	17.9	17.0	17.0	16.7	16.0
Total	80.3	79.3	79.4	80.1	80.6	79.9
Women						
15-19 Yrs	51.7	51.0	50.8	52.7	56.7	57.2
20-24 Yrs	68.9	69.9	71.8	72.4	74.1	76.5
25-34 Yrs	58.9	58.7	60.1	64.0	65.5	67.9
35-44 Yrs	58.5	59.1	60.7	63.1	64.8	66.9
45-54 Yrs	50.7	53.1	54.3	56.5	58.5	60.6
55-64 Yrs	36.1	37.4	37.9	37.1	40.0	38.1
65+ Yrs	5.3	4.8	4.3	4.5	4.7	4.3
Total	48.6	49.0	49.8	51.5	53.3	54.3
Both Sexes						
Total	64.1	63.9	64.3	65.5	66.6	66.8

SOURCES: a. Statistics Canada, Labour Force Annual Averages, 1975-1978, Cat No. 71-529 (Ottawa, Occasional)

b. Statistics Canada, The Labour Force, Cat. No. 71-001 (Ottawa: Monthly, December 1979 and December 1980)

TABLE 20

PROJECTED LABOUR FORCE PARTICIPATION RATES BY SEX AND AGE:
ONTARIO, 1981 TO 1986
(PERCENT)

SEX & AGE	Projection I						Projection II						Projection III					
	1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986
Men																		
15-19 Yrs	59.0	59.4	59.8	60.2	60.6	61.0	61.0	61.8	62.6	63.4	64.2	65.0	62.0	63.0	64.0	65.0	66.0	67.0
20-24 Yrs	86.8	87.0	87.2	87.4	87.6	87.8	87.4	87.8	88.2	88.6	89.0	89.4	87.6	88.2	88.8	89.4	90.0	90.6
25-34 Yrs	96.5	96.5	96.5	96.5	96.5	96.5	96.8	96.8	96.9	96.9	97.0	97.0	96.9	96.9	97.0	97.0	97.1	97.1
35-44 Yrs	97.4	97.4	97.4	97.4	97.4	97.4	97.5	97.5	97.6	97.6	97.7	97.7	97.7	97.7	97.8	97.8	97.9	97.9
45-54 Yrs	94.4	94.4	94.4	94.4	94.4	94.4	95.0	95.0	95.1	95.1	95.2	95.2	95.2	95.2	95.3	95.3	95.4	95.4
55-64 Yrs	79.2	79.2	79.0	79.0	78.8	78.8	79.5	79.7	79.9	80.1	80.3	80.5	80.5	80.7	80.9	81.1	81.3	81.5
65+ Yrs	16.0	15.5	15.0	14.5	14.0	13.5	17.2	16.9	16.6	16.3	16.0	15.7	17.4	17.4	17.5	17.5	17.6	17.6
Total	79.9	80.2	80.3	80.5	80.6	80.5	80.6	80.9	81.3	81.6	81.7	81.8	81.0	81.4	81.8	82.2	82.5	82.6
Women																		
15-19 Yrs	57.4	58.0	58.6	59.2	59.8	60.4	57.8	58.9	60.0	61.1	62.2	63.3	58.2	59.5	60.8	62.1	63.4	64.7
20-24 Yrs	75.2	75.8	76.4	77.0	77.6	78.2	75.8	76.9	78.0	79.1	80.2	81.3	76.9	78.2	79.5	80.8	82.1	83.4
25-34 Yrs	69.2	70.2	71.2	72.2	73.2	74.2	70.5	72.3	74.1	75.9	77.7	79.5	71.0	73.0	75.0	77.0	79.0	81.0
35-44 Yrs	67.4	68.4	69.4	70.4	71.4	72.4	67.9	69.5	71.1	72.7	74.3	75.9	68.9	70.7	72.5	74.3	76.1	77.9
45-54 Yrs	60.0	61.0	62.0	63.0	64.0	65.0	60.5	62.4	64.3	66.2	68.1	70.0	61.0	62.9	64.8	66.7	68.6	70.5
55-64 Yrs	37.5	37.6	37.7	37.8	37.9	38.0	37.7	38.1	38.5	38.9	39.3	39.7	38.1	38.6	39.1	39.6	40.1	40.6
65+ Yrs	4.5	4.5	4.5	4.5	4.5	4.5	5.8	5.6	5.4	5.2	5.0	4.8	5.9	5.9	6.0	6.0	6.1	6.1
Total	54.4	54.9	55.5	56.1	56.5	57.0	55.1	56.2	57.3	58.3	59.3	60.3	55.6	56.9	58.2	59.4	60.6	61.7
Both Sexes																		
Total	66.8	67.2	67.6	68.0	68.2	68.4	67.5	68.3	69.0	69.6	70.2	70.8	68.0	68.8	69.7	70.5	71.2	71.9

TABLE 21

LABOUR FORCE BY SEX AND AGE:
ONTARIO, 1975 TO 1980
('000s)

SEX AND AGE	1975[a]	1976[a]	1977[a]	1978[a]	1979[b]	1980[b]
Men						
15-19 Yrs	226	216	228	245	258	255
20-24 Yrs	298	305	320	331	342	346
25-34 Yrs	599	619	634	650	663	673
35-44 Yrs	464	463	470	481	491	499
45-54 Yrs	429	436	433	438	436	432
55-64 Yrs	269	266	276	282	291	291
65+ Yrs	58	53	51	53	54	53
Total	2342	2361	2412	2480	2533	2548
Women						
15-19 Yrs	199	200	202	212	229	229
20-24 Yrs	251	262	275	282	292	304
25-34 Yrs	370	381	401	439	459	487
35-44 Yrs	275	281	293	311	326	345
45-54 Yrs	236	248	253	263	270	279
55-64 Yrs	125	134	140	142	158	154
65+ Yrs	20	19	17	19	21	20
Total	1476	1524	1581	1667	1756	1818
Both Sexes						
15-19 Yrs	425	416	430	457	487	484
20-24 Yrs	550	567	595	613	634	651
25-34 Yrs	968	1000	1035	1089	1122	1160
35-44 Yrs	739	746	763	791	817	844
45-54 Yrs	665	684	686	701	706	711
55-64 Yrs	394	400	416	424	449	445
65+ Yrs	78	71	69	72	74	73
Total	3818	3885	3994	4147	4289	4366

Sources: a. Statistics Canada, Labour Force Annual Averages, 1975-1978. Cat. No. 71-529 (Ottawa: Occasional)

b. Statistics Canada, The Labour Force, Cat. No. 71-001 (Ottawa: Monthly, December 1979 and December 1980)

TABLE 22

PROJECTED LABOUR FORCE BY SEX AND AGE :
ONTARIO 1981 TO 1986
('000s)

SEX & AGE	Projection I						Projection II						Projection III					
	1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986
Men																		
15-19 Yrs	240	234	225	217	211	209	248	243	235	228	223	222	252	248	241	234	230	229
20-24 Yrs	358	365	371	372	370	361	361	368	375	377	376	367	362	370	377	381	380	372
25-34 Yrs	692	700	712	728	745	764	694	702	715	731	749	768	695	703	716	731	750	769
35-44 Yrs	512	538	559	578	595	612	513	538	560	579	597	614	514	539	561	580	598	615
45-54 Yrs	432	431	430	430	430	430	435	434	434	434	433	434	436	435	435	435	434	435
55-64 Yrs	298	304	311	318	320	322	299	306	315	322	326	329	303	310	319	326	330	333
65+ Yrs	54	53	52	51	51	51	58	58	58	58	58	59	59	60	61	62	64	66
Total	2586	2625	2660	2694	2722	2749	2608	2649	2692	2729	2762	2793	2621	2665	2710	2749	2786	2819
Women																		
15-19 Yrs	223	219	212	204	200	198	225	223	217	211	208	208	226	225	219	214	212	212
20-24 Yrs	305	310	316	319	319	313	307	315	322	327	330	325	311	320	328	335	337	334
25-34 Yrs	510	522	536	552	569	588	520	538	558	580	605	630	523	543	565	588	615	642
35-44 Yrs	356	380	402	422	441	461	359	386	412	435	459	483	364	392	420	445	470	496
45-54 Yrs	275	278	282	288	293	300	277	285	293	303	312	323	279	287	295	305	314	325
55-64 Yrs	156	159	164	167	169	170	156	162	167	172	175	177	158	164	170	175	179	181
65+ Yrs	21	21	22	23	23	24	27	27	26	26	26	26	27	28	29	30	32	33
Total	1846	1889	1934	1975	2014	2054	1871	1936	1995	1054	2115	2172	1888	1959	2026	2092	2159	2223
Both Sexes																		
15-19 Yrs	463	453	437	421	411	407	473	466	452	439	431	430	478	473	460	448	442	441
20-24 Yrs	663	675	687	691	689	674	668	683	697	704	706	692	673	690	705	716	717	706
25-34 Yrs	1202	1222	1248	1280	1314	1352	1214	1240	1273	1311	1354	1398	1218	1246	1281	1319	1365	1411
35-44 Yrs	868	918	961	1000	1036	1073	872	924	972	1014	1056	1097	878	931	981	1025	1068	1111
45-54 Yrs	707	709	712	718	723	730	712	719	727	737	745	757	715	722	730	740	748	760
55-64 Yrs	454	463	475	485	489	492	455	468	482	494	501	506	461	474	489	501	509	514
65+ Yrs	75	74	74	74	74	75	85	85	84	84	84	85	86	88	90	92	96	99
Total	4432	4514	4594	4669	4736	4803	4479	4585	4687	4783	4877	4965	4509	4624	4736	4841	4945	5042

TABLE 23

GROWTH RATES OF THE LABOUR FORCE BY SEX AND AGE:
ONTARIO, 1970 TO 1975, 1976 TO 1980, AND 1981 TO 1986

(PERCENT)

SEX AND AGE	Historical		Projected		
	1970 TO 75	1976 TO 80	1981 TO 86		
			Projection I	Projection II	Projection III
Men					
15-19 Yrs	6.6	2.6	-3.3	-2.3	-1.8
20-24 Yrs	3.4	3.0	0.8	1.0	1.2
25-34 Yrs	5.2	2.3	2.1	2.2	2.3
35-44 Yrs	0.7	1.5	3.5	3.5	3.6
45-54 Yrs	2.0	0.1	-0.1	0.1	0.1
55-64 Yrs	0.9	1.6	1.7	2.0	2.3
65+ Yrs	-2.7	-1.7	-0.6	1.9	3.8
Total	2.8	1.7	1.3	1.6	1.7
Women					
15-19 Yrs	7.8	2.9	-2.4	-1.6	-1.3
20-24 Yrs	5.2	3.9	0.5	1.1	1.6
25-34 Yrs	10.7	5.7	3.2	4.4	4.7
35-44 Yrs	4.3	4.6	5.0	5.8	6.2
45-54 Yrs	3.4	3.4	1.2	2.5	2.6
55-64 Yrs	1.9	4.4	1.7	2.3	2.7
65+ Yrs	1.9	0.4	3.1	5.2	9.3
Total	5.8	4.2	2.1	3.0	3.4
Both Sexes					
15-19 Yrs	7.1	2.7	-2.9	-2.0	-1.5
20-24 Yrs	4.2	3.4	0.6	1.0	1.4
25-34 Yrs	6.9	3.7	2.6	3.2	3.3
35-44 Yrs	1.8	2.7	4.1	4.5	4.7
45-54 Yrs	2.6	1.4	0.4	1.1	1.1
55-64 Yrs	1.1	2.5	1.7	2.2	2.5
65+ Yrs	1.6	-1.2	0.5	2.7	5.3
Total	3.8	2.7	1.6	2.2	2.4

projection period. However, as in the past, it will remain higher than the rate of growth of the working-age population because of the higher participation rates particularly of women in the labour force.

This slower growth of the labour force will be accompanied by the aging of the labour force. In Projection II the changes in the age-sex distribution of the working-age population, and in the participation rates will affect the labour force growth rates of the various age-sex groups in the following ways (see Table 23 for more details):

- Between 1981 and 1986 the total female labour force is projected to grow almost twice as fast (3.0 per cent) as the total male labour force (1.6 per cent), but even so the projected growth rates are lower than historical trends. As compared with the projected average annual growth rate of 3.0 per cent between 1981 and 1986, the female labour force grew at an average annual rate of 4.2 per cent between 1976 and 1980 and 5.8 per cent between 1970 and 1975.

- Between 1981 and 1986 the prime-age labour force (25-to-44) will grow faster than any other age group. The labour force 35-to-44 years old will grow at an average annual rate of 4.5 per cent between 1981 and 1986, much faster than the rate of only 2.7 per cent between 1976 and 1980 and 1.8 per cent between 1970 and 1975. This increase is caused by higher rates of growth in the population in this age group and increased participation in the labour force by women in this age group.

- The growth rate for the labour force in the 25-to-34 age group has been declining since 1970. The average annual rate of growth of the labour force in this age group declined from 6.9 per cent between 1970 and 1975 to 3.7 per cent between 1976 and 1980, and is projected to decline even further to 3.2 per cent between 1981 and 1986. In spite of this trend the average annual rate of growth for this group will be the second highest during the projection period.

- Youth labour force in the 15-to-24 age group will grow more slowly than any other age group.

  - The labour force in the 15-to-19 age group will experience a net decline at an average annual rate of 2.0 per cent between 1981 and 1986, compared with the phenomenal growth at an annual rate of 7.1 per cent between 1970 and 1975. During the 1981-86 period, the decline in the population of this age group will be so large that despite increasing participation rates the absolute size of the youth labour force will decline.

  - The labour force 20-to-24 years of age will grow at an average annual rate of 1.0 per cent between 1981 and 1986 compared with the rate of 3.4 per cent between 1976 and 1980.

The changes in the growth rates for the different age groups in Projection II would result in the following shifts in the age-sex distribution of the labour force between 1981 and 1986 (see Table 24 for more details):

- The proportion of women in the labour force will increase from 41.8 per cent in 1981 to 43.7 per cent in 1986. The largest portion of this increase will occur in the female labour force 35-to-44 years old, whose share of the total labour force will increase from 8.0 per cent in 1981 to 9.7 per cent in 1986.

- The prime-age group (25-to-44) will account for a larger share of the total labour force. This share is projected to increase from 46.6 per cent in 1981 to 50.3 per cent in 1986. Most of this increase will be accounted for by persons 35-to-44 years old.

TABLE 24

PERCENTAGE DISTRIBUTION OF THE LABOUR FORCE BY SEX AND AGE:

ONTARIO, 1970, 1975, 1980, 1981 AND 1986

SEX AND AGE	HISTORICAL			PROJECTED					
				Projection I		Projection II		Projection III	
	1970	1975	1980	1981	1986	1981	1986	1981	1986
Men									
15-19 Yrs	5.0	5.9	5.8	5.4	4.4	5.5	4.5	5.6	4.5
20-24 Yrs	8.3	7.8	7.9	8.1	7.5	8.1	7.4	8.0	7.4
25-34 Yrs	15.6	15.7	15.4	15.6	15.9	15.5	15.5	15.4	15.3
35-44 Yrs	14.7	12.2	11.4	11.6	12.7	11.5	12.4	11.4	12.2
45-54 Yrs	12.6	11.2	9.9	9.7	9.0	9.7	8.7	9.7	8.6
55-64 Yrs	8.3	7.1	6.7	6.7	6.7	6.7	6.6	6.7	6.6
65+ Yrs	2.1	1.5	1.2	1.2	1.1	1.3	1.2	1.3	1.3
Total	66.5	61.3	58.4	58.3	57.2	58.2	56.3	58.1	55.9
Women									
15-19 Yrs	3.9	5.2	5.2	5.0	4.1	5.0	4.2	5.0	4.2
20-24 Yrs	6.1	6.6	7.0	6.9	6.5	6.9	6.5	6.9	6.6
25-34 Yrs	6.8	9.7	11.2	11.5	12.2	11.6	12.7	11.6	12.7
35-44 Yrs	6.6	7.2	7.9	8.0	9.6	8.0	9.7	8.1	9.8
45-54 Yrs	6.2	6.2	6.4	6.2	6.2	6.2	6.5	6.2	6.4
55-64 Yrs	3.3	3.3	3.5	3.5	3.5	3.5	3.6	3.5	3.6
65+ Yrs	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.7
Total	33.5	38.7	41.6	41.7	42.8	41.8	43.7	41.9	44.1
Both Sexes									
15-19 Yrs	8.9	11.1	11.1	10.4	8.5	10.6	8.7	10.6	8.7
20-24 Yrs	14.5	14.4	14.9	15.0	14.0	14.9	13.9	14.9	14.0
25-34 Yrs	22.4	25.4	26.5	27.1	28.1	27.1	28.2	27.0	28.0
35-44 Yrs	21.3	19.4	19.3	19.6	22.3	19.5	22.1	19.5	22.0
45-54 Yrs	18.8	17.4	16.3	16.0	15.2	15.9	15.2	15.9	15.1
55-64 Yrs	11.6	10.3	10.2	10.2	10.2	10.2	10.2	10.2	10.2
65+ Yrs	2.6	2.0	1.7	1.7	1.6	1.9	1.7	1.9	2.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

- All other age groups except those 55-to-64 years old will account for a smaller share of the total labour force. The share of the 55-to-64 age group will remain unchanged at 10.2 per cent.

- The largest decline in the share of the labour force will occur among youth in the 15-to-19 age group. Their share will decline from 10.6 per cent in 1981 to 8.7 per cent by 1986.

5. Net Additions to the Labour Force

Table 25 shows that between 1981 and 1986 the labour force will increase by 437,000 in Projection I (low); 599,000 in Projection II (medium); and 676,000 in Projection III (high). Even in Projection III (high) the average annual increase does not match the labour force increases achieved during the 1970-75 period. In both Projection II (medium) and Projection I (low) the labour force increases in the first half of the 1980's are projected to be much lower than those achieved in the 1970's.

The contribution of the various age-sex groups to the net additions to the labour force between 1981 and 1986 in Projection II (medium) are described below:

- As the population from the baby-boom generation move from youth into the prime-age group, this group's share of the total growth in the labour force will increase dramatically. Between 1976 and 1980 this group accounted for 297,000, or more than half of the growth in the labour force. Between 1981 and 1986 the prime-age group is projected to account for 491,000, or four-fifths of the growth in the labour force. The most dramatic change is in the 35-to-44 age group. This age group accounted for only 19.2 per cent of the growth in the labour force between 1976 and 1980. Between 1981 and 1986, this age group will provide 42.2 per cent of the growth in the labour force.

TABLE 25

NET ADDITIONS TO THE LABOUR FORCE AND PERCENT DISTRIBUTION BY SEX AND AGE: ONTARIO, 1970 TO 1975, 1976 TO 1980 AND 1981 TO 1986

Sex & Age	HISTORICAL				PROJECTED					
	1970 to 1975		1976 to 1980		1981 to 1986					
					Projection I		Projection II		Projection III	
	Net Additions (000's)	Percent Distribution	Net Additions (000's)	Percent Distribution	Net Additions (000's)	Percent Distribution	Net Additions (000's)	Percent Distribution	Net Additions (000's)	Percent Distribution
Men										
15-19 Yrs	70	9.5	29	5.3	-46	-10.5	-33	-5.5	-26	-3.8
20-24 Yrs	58	7.8	48	8.8	15	3.4	21	3.5	26	3.8
25-34 Yrs	158	21.4	74	13.5	91	20.8	95	15.9	96	14.2
35-44 Yrs	15	2.0	35	6.4	113	25.9	115	19.2	116	17.2
45-54 Yrs	51	6.9	3	0.5	-2	-0.5	2	0.3	3	0.4
55-64 Yrs	16	2.2	22	4.0	31	7.1	38	6.3	42	6.2
65+ Yrs	-12	-1.6	-5	-0.9	-2	-0.5	6	1.0	13	1.9
Total	356	48.2	206	37.6	201	46.0	245	40.9	271	40.1
Women										
15-19 Yrs	61	8.3	30	5.5	-31	-7.1	-21	-3.5	-17	-2.5
20-24 Yrs	65	8.8	53	9.7	9	2.1	21	3.5	30	4.4
25-34 Yrs	149	20.2	117	21.4	101	23.1	143	23.9	155	22.9
35-44 Yrs	47	6.4	70	12.8	116	26.5	138	23.0	151	22.3
45-54 Yrs	51	6.9	43	7.8	21	4.8	44	7.3	46	6.8
55-64 Yrs	9	1.2	29	5.3	16	3.7	23	3.8	27	4.0
65+ Yrs.	0	0.0	0	0.0	4	0.9	6	1.0	13	1.9
Total	382	51.8	342	62.4	236	54.0	354	59.1	405	59.9
Both Sexes										
15-19 Yrs	131	17.8	59	10.8	-77	-17.6	-54	-9.0	-43	-6.4
20-24 Yrs	123	16.6	101	18.4	23	5.3	41	6.8	55	8.1
25-34 Yrs	307	41.6	192	35.0	192	43.9	238	39.7	251	37.1
35-44 Yrs	62	8.4	105	19.2	229	52.4	253	42.2	267	39.5
45-54 Yrs	102	13.8	46	8.4	19	4.3	46	7.7	49	7.2
55-64 Yrs	25	3.4	51	9.3	47	10.8	61	10.2	69	10.2
65+ Yrs	-12	-1.6	-5	-0.9	2	0.5	12	2.0	26	3.8
Total	738	100.0	548	100.0	437	100.0	599	100.0	676	100.0

- The contribution of the 15-to-24 age group to the growth of the labour force will decline during the projection period. Those in the 20-to-24 age group contributed 18.4 per cent of the growth in the labour force between 1976 and 1980, and are projected to account for only 6.8 per cent of the growth in the labour force between 1981 and 1986. The actual number of youths in the 15-to-19 age group will experience a net decline of 54,000 during this period. Almost two-thirds of this decrease will be accounted for by males.

- Persons in the 45-to-54 age group will account for only 7.7 per cent of the growth in the labour force during the 1981-86 period, a decline from their contribution of 8.4 per cent during the 1976-80 period.

6. Projections of Labour Supply by Source

In the previous section projections of the net additions to the labour force were presented. These were based on projected population and participation rates by age and sex. These estimates of net additions do not give a complete picture because they merely reflect changes in the stock between any two time periods. In reality, however, there is a continuous flow of persons into and out of the labour force. People withdraw from the labour force mainly because of retirement or death, though they may also withdraw in order to go back to school full-time, or because of illness, family responsibilities, or personal reasons; or because they decide to leave this province for another or to emigrate. People entering the labour force come from a variety of sources: they can be students who have finished their education and have entered the labour force full-time, persons from households who have decided to enter or re-enter the labour force, in-migrants, or immigrants and persons from the armed forces returning to civilian life.

This section provides a discussion of the labour supply available to Ontario labour force from: (a) the formal education sector in Ontario which includes Universities, Community Colleges, Secondary Schools, and Private Vocational Schools; (b) training programs including Apprenticeship Program,

Modular Training Program, Canada Manpower Training Program, Canada Manpower Industrial Training Program and Training in Industry; (c) the armed forces, i.e., persons who enter the civilian labour force after serving in the armed forces; (d) interprovincial and international migration; and (e) the household sector. A brief discussion of the projection from each of these sources is presented below.

6.a. The Education Sector

The projections of the labour supply from secondary schools, colleges, and universities in Ontario were prepared using a three-step process:

(i) The historical data by type of institution on full-time enrolments, graduates and those who leave the system without completing their education (i.e., "non-graduates"), were extrapolated to develop projections of the number of graduates, and non-graduates by broad education category.

(ii) Since not all of these graduates and non-graduates enter the labour force, it is necessary to identify those graduates and non-graduates who will be available to the labour force for the first time.[4]

Data on the proportion of graduates destined to the labour force are available from a number of sources.[5] To

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[4]Some of these students continue their education while others leave the province or return to their home countries.

[5]Data on proportion of secondary school graduates potentially available to the labour force were obtained from Statistics Canada's USIS system and from Ministry of Colleges and Universities' OCIS (Ontario Colleges Information System).

Data on the proportion of CAATS graduates who are available for work were obtained from the Graduate Placement Reports of the OCIS System.

Data on the proportion of university graduates potentially available to the labour force were obtained from the 1979 Ontario Graduate Employment Survey data.

estimate the number of graduates available to the labour force in Ontario these ratios were applied to the projected number of graduates at each level of the education system.

Unlike the data for graduates, data on the destination of non-graduates are scarce. [6] However, the limited information available was used to adjust the projected number of non-graduates to obtain estimates of the number who would be available to the labour force in Ontario.

(iii) It can be argued that some of the graduates and non-graduates identified as potentially available to the labour force in the projections obtained above are already members of the labour force. According to the Labour Force Survey, in 1980, 41.0 per cent of the full-time students in secondary schools, 32.9 per cent of the full-time students in colleges and 28.7 per cent of the full-time students in universities were already participating in the labour force in Ontario. In order to estimate the number of new entrants to the labour force who are not already in the labour force we have excluded from the projections described above the proportion of students already in the labour force.

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[6]The proportion of secondary school non-graduates potentially available to the labour force was obtained by excluding the proportion returning to the secondary school or continuing their education elsewhere. Data on these proportions were obtained from the Ministry of Eduction.

Data on the proportion of CAATS non-graduates who are available for work were obtained from the OCIS System.

Since no data on the labour force participation of non-graduates are available at the university level, it was assumed that all of them will be potentially available to the labour force in Ontario.

The formal education sector is the single largest source of labour supply in Ontario. The projections in Table 26 show that between 1981 and 1986, there will be 1.2 million full-time students graduating from secondary schools, community colleges and universities in Ontario. In addition, the number of full-time students who may withdraw from these institutions without completing their educational programs is projected to be approximately 500,000. In terms of the level of education of the 1.7 million full-time students who will graduate or withdraw from the formal education sector:

- 10.1 per cent or 171,900 would be university graduates;
- 7.8 per cent or 132,800 would be college graduates;
- 51.3 per cent or 875,400 would be secondary schools graduates;
- 5.2 per cent or 88,3000 would be non-graduates from universities;
- 9.0 per cent or 153,900 would be non-graduates from colleges;
- 16.6 per cent or 282,200 would be non-graduates from secondary schools.

Not all graduates or non-graduates enter the labour force. Some may continue their education, others may leave the province, and still others may return to the household sector. Of the graduates and non-graduates available to the labour force in Ontario some are already in the labour force. Therefore, as shown in Table 27 of the 1.7 million full-time students who will graduate or withdraw from the formal education sector during the projection period, only 647,100 students are projected to enter the labour force in Ontario for the first time. Approximately 44.5 per cent of the new entrants to the labour force from the education sector will not have completed their education either at the secondary or post-secondary level. The level of education achievement by the 647,100 new entrants to the labour force is expected to be as follows:

- 17.4 per cent or 112, 300 will have completed a university degree;

TABLE 26

GRADUATES AND NON-GRADUATES FROM THE EDUCATION SECTOR:

ONTARIO, 1981 TO 1986

Year	SECONDARY SCHOOLS		COLLEGES		UNIVERSITIES		TOTAL		Grand Total
	Graduates	Non-Graduates	Graduates	Non-Graduates	Graduates	Non-Graduates	Graduates	Non-Graduates	
1981	157,300	52,200	19,500	23,500	28,400	15,000	205,200	90,700	295,900
1982	157,000	50,000	21,400	24,800	28,800	15,000	207,200	89,800	297,000
1983	151,700	47,500	22,200	25,700	29,100	15,200	203,000	88,400	291,400
1984	142,300	45,300	22,800	26,300	29,100	15,200	194,200	86,800	281,000
1985	135,600	43,900	23,300	26,700	28,800	14,700	187,700	85,300	273,000
1986	131,500	43,300	23,600	26,900	27,700	13,200	182,800	83,400	266,200
TOTAL 1981-86	875,400	282,200	132,800	153,900	171,900	88,300	1,180,100	524,400	1,704,500

TABLE 27

NEW ENTRANTS TO THE LABOUR FORCE FROM THE EDUCATION SECTOR:

ONTARIO, 1981 TO 1986

Year	SECONDARY SCHOOLS		COLLEGES		UNIVERSITIES		TOTAL		Grand Total
	Graduates	Non-Graduates	Graduates	Non-Graduates	Graduates	Non-Graduates	Graduates	Non-Graduates	
1981	32,500	30,800	10,600	9,000	18,500	10,700	61,600	50,500	112,100
1982	32,000	29,500	11,500	9,400	18,800	10,700	62,300	49,600	111,900
1983	30,400	28,000	11,900	9,700	19,000	10,800	61,300	48,500	109,800
1984	27,900	26,700	12,400	10,000	19,000	10,800	59,300	47,500	106,800
1985	26,700	25,900	12,600	10,100	18,800	10,500	58,100	46,500	104,600
1986	25,900	25,500	12,700	10,200	18,200	9,400	56,800	45,100	101,900
TOTAL 1981-86	175,400	166,400	71,700	58,400	112,300	62,900	359,400	287,700	647,100

- 11.1 per cent or 71,700 will have completed a college education;
- 18.7 per cent or 121,300 will have completed some post-secondary education;
- 27.1 per cent or 175,400 will have completed grade 12 or 13;
- 25.7 per cent or 166,400 will have less than grade 12 education.

The following section briefly discusses the projections for each of the educational levels.

Projection by Educational Levels

Secondary Schools

As the size of the youth population declines, enrolments in grades 12 and 13 in secondary schools in Ontario are projected to decline by 17 per cent from 189,300 in 1981 to 157,100 in 1986 (see Table 28). This declining enrolment will in turn be reflected in the number of students graduating from secondary schools which is expected to decline from 157,300 in 1981 to 131,500 by 1986 (see Table 29).

Since many secondary school graduates continue their education at the post-secondary level, the number of graduates entering the labour force in Ontario during the 1981-86 period is projected to be 175,400 or 29,200 per year. During the same period, the number of non-graduates from secondary schools entering the labour force is projected to be 166,400 or 27,700 per year (see Table 31).

Altogether, there will be 342,000 persons (or 57,000 persons per year) entering the labour force from secondary schools in Ontario during the 1981-86 period. This constitutes more than half the total new entrants to the labour force from the formal education sector in Ontario.

TABLE 28

FULL-TIME ENROLLMENTS BY TYPE OF INSTITUTION:

ONTARIO, 1975 TO 1986

Year Fall Term	Secondary	Post-Secondary				Grand Total
	Gr. 12 & Gr. 13	College	University			
			Undergraduate	Graduate	Total	
Actual						
1975	180,000[a]	58,300[b]	134,500[c]	15,900[c]	150,400	388,700
1976	182,800[a]	58,300[b]	139,400[c]	15,800[c]	155,200	396,300
1977	185,100[a]	60,600[b]	136,700[c]	15,100[c]	151,800	397,500
1978	187,600[a]	63,700[b]	133,000[c]	14,900[c]	147,900	399,200
1979	187,900[a]	69,600[b]	134,300[c]	14,500[c]	148,800	406,300
Projected						
1980	189,300	75,500	135,700	14,200	149,900	414,700
1981	189,000	80,500	137,300	14,400	151,700	421,200
1982	182,800	83,900	138,500	14,500	153,000	419,700
1983	171,200	85,900	138,800	14,600	153,400	410,500
1984	161,500	87,700	136,900	14,400	151,300	400,500
1985	156,700	88,700	131,900	13,900	145,800	391,200
1986	157,100	89,300	126,300	13,100	139,400	385,800

Note: All data have been rounded to the closest hundred

Sources: a. Ministry of Education, Education Statistics

b. Ministry of Colleges and Universities, OCIS Students Outcome Analysis System

c. Statistics Canada, USIS Files

TABLE 29

GRADUATIONS BY LEVEL OF EDUCATION[1]

ONTARIO, 1975 TO 1986

Year of Graduation	Secondary School Certificates and Diplomas	College	University				Total Post Sec.	Grand Total
			Bachelors[2]	Masters[3]	Doctorate	Total		
Actual								
1975	140,100[a]	2,800[4]	21,900[c]	3,000[c]	400[c]	25,300	28,100	168,200
1976	145,500[a]	12,800[4]	23,900[c]	3,200[c]	400[c]	27,500	40,300	185,800
1977	149,100[a]	16,600[b]	26,200[c]	3,100[c]	400[c]	29,800	46,400	195,500
1978	150,600[a]	17,000[b]	25,500[c]	3,000[c]	400[c]	28,900	45,900	196,500
1979	155,500[a]	17,400[b]	24,700[c]	3,000[c]	400[c]	28,100	45,500	201,000
Projected								
1980	156,600	18,100	25,000	2,900	400	28,300	46,400	203,000
1981	157,300	19,500	25,100	2,900	400	28,400	47,900	205,200
1982	157,000	21,400	25,500	2,900	400	28,800	50,200	207,200
1983	151,700	22,200	25,800	2,900	400	29,100	51,300	203,000
1984	142,300	22,800	25,800	2,900	400	29,100	51,900	194,200
1985	135,600	23,300	25,500	2,900	400	28,800	52,100	187,700
1986	131,500	23,600	24,500	2,800	400	27,700	51,300	182,800

Notes:
1. All data have been rounded to the closest hundred.
2. Includes Bachelors, 1st Professional and Undergraduate Cert./Dipl.
3. Includes Masters and Graduate Cert./Dipl.
4. The OCIS Students Outcome Analysis System does not include all graduates for the years 1975 and 1976.

Sources:
a. Ministry of Education, Education Statistics.
b. Ministry of Colleges and Universities, OCIS Students Outcome Analysis System.
C. Statistics Canada, USIS Files.

TABLE 30

NON-GRADUATES[1] BY LEVEL OF EDUCATION

ONTARIO, 1975 TO 1986

Year	Secondary School[2]	College	University[3]	Total
Actual				
1974-75	52,400[a]	13,600[b]	16,400[c]	82,400
1975-76	52,400[a]	16,800[b]	17,100[c]	86,300
1976-77	58,100[a]	16,600[b]	19,400[c]	94,100
1977-78	57,300[a]	16,700[b]	17,500[c]	91,500
1978-79	54,900[a]	16,500[b]	14,700[c]	86,100
Projected				
1979-80	53,500	22,100	14,800	90,400
1980-81	52,200	23,500	15,000	90,700
1981-82	50,000	24,800	15,000	89,800
1982-83	47,500	25,700	15,200	88,400
1983-84	45,300	26,300	15,200	86,800
1984-85	43,900	26,700	14,700	85,300
1985-86	43,300	26,900	13,200	83,400

Notes:

1. Non-graduates are students who leave the education system without completing their program. All data have been rounded to the closest hundred.

2. Secondary school leavers without completing education does not include those who re-enter the secondary schools or continue their education outside the publicly supported secondary school system.

3. University leavers without completing education refers to students in undergraduate programs only.

Sources:

a. Ministry of Education, Education Statistics

b. Ministry of Colleges and Universities, OCIS Students Outcome Analysis System.

c. Derived from Statistics Canada, USIS Files

TABLE 31

NEW ENTRANTS TO THE LABOUR FORCE
FROM SECONDARY SCHOOLS
ONTARIO, 1981 TO 1986

Year	Total	Potentially Available to the Labour Force		Percent Already in the Labour Force	New Entrants to the Labour force
		Percent	Number		
GRADUATES					
1981	157,300	34.9	55,000	41.0	32,500
1982	157,000	34.5	54,200	41.0	32,000
1983	151,700	34.0	51,600	41.0	30,400
1984	142,300	33.2	47,300	41.0	27,900
1985	135,600	33.4	45,300	41.0	26,700
1986	131,500	33.3	43,900	41.0	25,900
NON-GRADUATES					
1981	52,200	100.0	52,200	41.0	30,800
1982	50,000	100.0	50,000	41.0	29,500
1983	47,500	100.0	47,500	41.0	28,000
1984	45,300	100.0	45,300	41.0	26,700
1985	43,900	100.0	43,900	41.0	25,900
1986	43,300	100.0	43,300	41.0	25,500

Colleges of Applied Arts and Technology (CAATS)

Full-time enrolments in post-secondary programs at CAATS have been steadily increasing over the last five years and are projected to grow further reaching 89,300 by 1986 (see Table 28). Consequently, the number of graduates from CAATS is also projected to increase from 19,500 in 1981 to 23,600 in 1986 (see Table 29).

CAATS offer their programs through four major divisions: Business, Health, Applied Arts, and Technology. These programs vary in duration from 1 to 3 years and lead to employment in a wide variety of white- and blue-collar occupations.[7]

Our projections show that during the 1981-86 period, the total number of graduates from CAATS entering the labour force in Ontario is estimated to be 71,700 or about 12,000 per year. An overwhelming 92 per cent (65,700) of these will be from programs that lead to employment in white-collr occupations and only 8 per cent (6,000) are expected to be trained for blue-collar occupations.

In terms of duration of training, only 2 per cent of the new entrants will be graduates of three year programs which provide training for highly skilled blue-collar occupations and 6 per cent will be graduates of one and two year programs leading to medium skilled blue-collar occupations. The majority (68 per cent) of the new entrants will be graduates of one and two year programs that lead to employment in white-collar occupations and less than one-quarter will be from three year programs (see Table 32).

During the 1981-86 period, the total number of non-graduates from CAATS entering the labour force in Ontario is estimated to be 58,400, or about 9,700 per year.

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[7]The projections of graduates and non-graduates were made for clusters of programs that correspond to the occupations for which they provide training. Then they were clustered into white- and blue-collar occupations by duration.

TABLE 32

NEW ENTRANTS TO THE LABOUR FORCE

FROM COLLEGES

ONTARIO, 1981 TO 1986

White- & Blue-Collar Occupations By Year	Total	Potentially Available to the Labour Force		Percent Already in the Labour Force	New Entrants to the Labour Force
		Percent	Number		
GRADUATES					
White-Collar Occupations:					
3 Yrs.					
1981	4,400	83.8	3,700	32.9	2,500
1982	4,800	83.8	4,000	32.9	2,700
1983	4,800	83.8	4,000	32.9	2,700
1984	5,100	83.8	4,300	32.9	2,900
1985	5,300	83.8	4,400	32.9	3,000
1986	5,400	83.8	4,500	32.9	3,000
2 Yrs. & 1 Yr.					
1981	13,600	79.3	10,800	32.9	7,200
1982	14,900	79.3	11,800	32.9	7,900
1983	15,600	79.3	12,400	32.9	8,300
1984	15,700	79.3	12,500	32.9	8,400
1985	16,000	79.3	12,700	32.9	8,500
1986	16,200	79.3	12,800	32.9	8,600

TABLE 32 (CONT'D)

White & Blue-Collar Occupations By Year	Total	Potentially Available to the Labour Force		Percent Already in the Labour Force	New Entrants to the Labour Force
		Percent	Number		
GRADUATES					
Blue-Collar Occupations:					
3 Yrs.					
1981	300	83.8	300	32.9	200
1982	300	83.8	300	32.9	200
1983	400	83.8	300	32.9	200
1984	500	83.8	400	32.9	300
1985	500	83.8	400	32.9	300
1986	500	83.8	400	32.9	300
2 Yrs. & 1 Yr.					
1981	1,200	79.3	1,000	32.9	700
1982	1,400	79.3	1,100	32.9	700
1983	1,400	79.3	1,100	32.9	700
1984	1,500	79.3	1,200	32.9	800
1985	1,500	79.3	1,200	32.9	800
1986	1,500	79.3	1,200	32.9	800
NON-GRADUATES					
1981	23,500	56.5	13,300	32.9	9,000
1982	24,800	56.5	14,000	32.9	9,400
1983	25,700	56.5	14,500	32.9	9,700
1984	26,300	56.5	14,900	32.9	10,000
1985	26,700	56.5	15,100	32.9	10,100
1986	26,900	56.5	15,200	32.9	10,200

TABLE 33

NEW ENTRANTS TO THE LABOUR FORCE

FROM UNIVERSITIES

ONTARIO, 1981 TO 1986

Level of Schooling and Year	Total	Potentially Available to the Labour Force		Percent Already in the Labour Force	New Entrants to the Labour force
		Percent	Number		
GRADUATES					
Doctorate					
1981	400	100.0	400	28.7	300
1982	400	100.0	400	28.7	300
1983	400	100.0	400	28.7	300
1984	400	100.0	400	28.7	300
1985	400	100.0	400	28.7	300
1986	400	100.0	400	28.7	300
Masters					
1981	2,900	92.2	2,700	28.7	1,900
1982	2,900	92.2	2,700	28.7	1,900
1983	2,900	92.2	2,700	28.7	1,900
1984	2,900	92.2	2,700	28.7	1,900
1985	2,900	92.2	2,700	28.7	1,900
1986	2,800	92.2	2,600	28.7	1,900
Bachelors					
1981	25,100	91.4	22,900	28.7	16,300
1982	25,500	91.4	23,300	28.7	16,600
1983	25,800	91.4	23,600	28.7	16,800
1984	25,800	91.4	23,600	28.7	16,800
1985	25,500	91.4	23,300	28.7	16,600
1986	24,500	91.4	22,400	28.7	16,000
NON-GRADUATES					
1981	15,000	100.0	15,000	28.7	10,700
1982	15,000	100.0	15,000	28.7	10,700
1983	15,200	100.0	15,200	28.7	10,800
1984	15,200	100.0	15,200	28.7	10,800
1985	14,700	100.0	14,700	28.7	10,500
1986	13,200	100.0	13,200	28.7	9,400

Universities: Undergraduate Programs

Data on full-time undergraduate enrolment at universities are presented in Table 28. These data show that full-time undergraduate enrolment fell by almost 5 per cent from the peak of 139,400 in 1976 to 133,000 students in 1978. Enrolment level has recovered slightly between 1978 to 1980. Since the 18-24 age group, from which Ontario universities currently draw more than 75 per cent of their enrolments, will continue to grow until 1983, full-time undergraduate university enrolment is likely to increase until then.

The total number of graduates from all undergraduate programs in universities will average 25,400 per year during the projection period (see Table 29). The number of full-time students who would withdraw from universities without completing their undergraduate programs is projected to be 14,700 per year (see Table 30).

Since not all graduates or non-graduates enter the labour market, the necessary adjustments were made to estimate the number of new entrants to the labour force. Based on these adjustments, it is estimated that, on average, 16,500 graduates and 10,500 non-graduates will enter the labour force annually from Ontario universities during the projection period (see Table 33).

The recent trends in full-time undergraduate enrolment by field of study indicate a shift in student preferences towards professional and career-oriented programs. Full-time undergraduate enrolment in Commerce and Business Administration, Engineering and Computer Science increased from 17.2 per cent of total full-time undergraduate enrolment in 1975-76 to 23.7 per cent in 1979-80. During the same period, enrolment in Arts and Science and Humanities declined from 38.4 per cent of the total enrolment in 1975-76 to 32.1 per cent in 1979-80 (see Table 34).[8] The present trends are likely to

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[8]These trends have also been identified in The Report of the Committee on the Future Role of Universities in Ontario, August 1981, p.11.

TABLE 34

ACTUAL FULL-TIME UNDERGRADUATE ENROLMENT BY MAJOR FIELD OF STUDY

ONTARIO, 1975-1979

Major Field of Study	1975	1976	1977	1978	1979
Education	11,004	11,532	10,625	9,504	9,106
Fine and Applied Arts	5,241	5,490	5,317	5,318	5,092
Humanities and Related	11,379	12,320	11,325	10,268	10,166
Total Social Sciences & Related	29,609	31,259	31,785	34,584	36,201
Social Science & Related	21,882	22,784	22,805	22,474	22,909
Commerce, Bus. Admin., Admin. Studies	7,727	8,475	8,980	12,110	13,292
Agriculture & Biological Sciences	8,427	8,832	8,557	8,089	7,594
Engineering and Applied Science	14,343	15,077	15,496	16,032	16,530
Health Professions & Occupations	7,548	7,869	8,753	8,887	8,862
Total Mathematics & Phy. Sciences	6,773	7,268	7,426	7,616	7,863
Mathematics & Physical Science	5,671	5,983	5,956	6,010	5,892
Computer Science	1,102	1,285	1,470	1,606	1,971
Arts and Science	40,165	39,751	37,402	32,712	32,908
Total	134,489	139,398	136,686	133,010	134,322

Source: Statistics Canada, USIS Files.

continue to the extent that universities are able to shift their limited resources from one set of programs to another in the future.[9]

Universities : Graduate Programs

Full-time graduate enrolment as a percentage of full-time undergraduate enrolment declined from 11.8 per cent in 1975 to 10.8 per cent in 1979 (see Table 28). Our estimates show that during the 1981-86 period, the number of graduates from Masters programs will be 2,900 per year while those from Doctorate programs will be 400 per year (see Table 29). However, new entrants to the labour force with a Masters degree will number 1,900 per year, while those with a Ph.D. degree will number only 300 per year (see Table 33).

Our analysis of the currently available data indicates that few Canadians are being attracted to graduate program in many technical fields because of the attractive starting salaries offered by employers to those with undergraduate degrees.[10] In fact, full-time graduate enrolment in Engineering programs declined from 1,540 in 1975-76 to 1,266 in 1979-80. During the same period, full-time graduate enrolment in Computer Science declined from 277 to 209 (see Table 35).

Private Vocational Schools

Privately-owned and operated vocational schools offer training in secretarial and clerical work, bookkeeping, computer science, radio announcing, drafting, salesmanship, fashion modelling, hotel-motel management, engine repair, television electronics, welding, court reporting and other such subjects. The programs are provided in day or evening classes as well as by correspondence. The duration of courses offered range anywhere from 6 weeks to 2 years depending on how many hours of instruction are required and whether they are day, evening or correspondence courses.

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[9]The Committee on the Future Role of Universities concludes that the funding proposed in the 1981 budget for universities is inadequate to meet the objectives set forth for the universities.

In addition, the Federal Task Force on the Labour Market in the 1980s suggests that less funds will be flowing to post-secondary institutions while the institutions are expected to expand programs that are among the most expensive to offer.

[10]These conclusions are also confirmed in The Report of the Committee on the Future Role of Universities in Ontario, August 1981.

TABLE 35

ACTUAL FULL-TIME GRADUATE ENROLMENT BY MAJOR FIELD OF STUDY

ONTARIO, 1975-1979

Major Field of Study	1975	1976	1977	1978	1979
Education	849	951	953	941	998
Fine and Applied Arts	181	189	249	242	255
Humanities and Related	2,965	2,901	3,157	3,077	2,650
Total Social Sciences & Related	5,618	5,539	5,764	5,760	5,655
Social Science & Related	4,160	4,070	4,172	4,141	3,923
Commerce, Bus. Admin., Admin. Studies	1,458	1,469	1,592	1,619	1,732
Agriculture & Biological Sciences	1,049	1,091	1,059	1,019	1,092
Engineering and Applied Science	1,540	1,568	1,489	1,377	1,266
Health Professions & Occupations	1,855	1,677	728	825	914
Total Mathematics & Phy. Sciences	1,744	1,771	1,626	1,496	1,535
Mathematics & Physical Science	1,467	1,483	1,373	1,244	1,326
Computer Science	277	288	253	252	209
Arts and Science	130	97	121	135	113
Total	15,931	15,784	15,146	14,872	14,478

Source: Statistics Canada, USIS Files.

Only since the fall of 1980, schools registered with the Ministry of Colleges and Universities under the Private Vocational Schools Act are being required to report on enrolments and graduates to the Ministry. Prior to that, it was done on a voluntary basis and therefore the data on enrolment and graduation are incomplete. The lack of data precludes the possibility of estimating the potential labour supply from this source.

6.b. Other Training Programs

In addition to the formal education sector, there are many training programs aimed at upgrading, training or retraining persons who are already in the labour force. This type of training facilitates occupational mobility both within the same group of occupations and also between occupation groups requiring different education and/or training requirements. Therefore, while these programs do not increase the total supply of labour, they are an important source for increasing the labour supply in certain occupations. The major training programs are:

- The Apprenticeship Program
- The Modular Training Program
- The Canada Manpower Training Program (CMTP)
- The Canada Manpower Industrial Training Program (CMITP)
- In-House Training in Industry

A brief description of these programs is provided in Appendix XXI. Most of these training programs are aimed at blue-collar occupations. They provide upgrading, training or retraining to persons with low level skills so that they can move into medium and highly skilled blue-collar occupations.

Our projections show that between 1981 and 1986, 52,800 trainees would complete an apprenticeship or modular training program and would be qualified to enter the highly skilled blue-collar occupations (see Table 36 and Appendix XXI). The distribution of apprenticeship and modular training completions by broad occupation groups over the 1981-86 period is projected to be as follows:

- 25.6 per cent or 13,500 in construction trades;

TABLE 36

APPRENTICESHIP COMPLETIONS, ONTARIO, 1976-77 TO 1985-86

	ACTUAL[a]				PROJECTION[b]						
	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	TOTAL 1981 TO 1986
REGULATED TRADES											
CONSTRUCTION	1,706	2,010	2,124	1,911	2,200	2,100	1,900	1,600	1,600	1,600	11,000
MOTIVE POWER	1,714	1,803	2,010	1,785	2,200	2,200	2,500	2,200	2,200	2,200	13,500
SERVICE	440	412	407	439	600	600	600	500	500	500	3,300
INDUSTRIAL	-	-	-	4	-	100	800	800	800	800	3,300
TOTAL REGULATED TRADES	3,860	4,225	4,541	4,139	5,000	5,000	5,800	5,100	5,100	5,100	31,100
TOTAL NON-REGULATED TRADES	525	474	618	454	600	800	800	900	900	900	4,900
GRAND TOTAL	4,385	4,699	5,159	4,593	5,600	5,800	6,600	6,000	6,000	6,000	36,000

Note: All projected data have been rounded to the closest hundred.

Sources: a) Compiled from the data supplied by Apprenticeship Branch, Ministry of Colleges and Universities.

b) Apprenticeship completions have been projected based on the relationship between registrations and completions lagged four years. Completions for 1985 and 1986 are assumed to be at the same level as in 1984.

- 25.6 per cent or 13,500 in automotive trades;
- 6.2 per cent or 3,300 in service trades;
- 12.9 per cent or 6,800 in mining;
- 14.2 per cent or 7,500 as stationary engineers;
- 6.2 per cent or 3,300 in industrial trades;
- 9.3 per cent or 4,900 in non-regulated trades.

Because of the lack of data, we were unable to make projections of labour supply of highly and medium skilled workers that could be available through the CMTP, CMITP, and in-house training in industry.

6.c. The Armed Forces[11]

The armed forces has 116 training establishments in 34 different locations. There are 21 schools at 9 units which concentrate on basic trades qualifications. They offer 3,000 courses varying in length from a couple of days to more than a year. Over a year 45,000 persons go through training programs of different duration in white- and blue-collar occupations.

The armed forces recruits 12,500 persons annually at the national level of which approximately 40 per cent are high school graduates. Thirty six per cent of the recruits are from Ontario. The Department of National Defence (DND) loses approximately 11,000 persons annually due to attrition. Almost all of these people enter the labour force. Of the 11,000 who leave the DND, approximately:

- 9.1 per cent are officers who are fully trained for professional occupations;
- 36.4 per cent are highly skilled tradesmen;
- 54.5 per cent vary from trade qualified to recruit failures. But many have immediate usable skills in the market place.

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[11]The information presented in this section is obtained from the Minutes of Proceedings and Evidence of the Special Committee on Employment Opportunities for the '80s, House of Commons, May 1981.

If we assume that recruits from Ontario will return to Ontario when they leave the DND, then we should expect approximately 4,000 persons per year to enter Ontario's Labour force upon leaving the armed forces. If we further assume that this number will remain constant over the projection period then 24,000 persons should be available to Ontario's Labour force between 1981 and 1986. The distribution by education and/or skills level of these new entrants to the labour force is projected to be as follows:

Professionals	2,200
Highly Skilled Blue-Collar Occupations	8,700
Medium Skilled White-Collar Occupations	6,600
Medium Skilled Blue-Collar Occupations	6,500

6.d. Interprovincial and International Migration

This section provides projections of the potential labour supply available to Ontario from interprovincial and international migration.

Interprovincial Migration

Through interprovincial migration Ontario has experienced net losses to other provinces (particularly B. C. and Alberta) every year since 1973-74, except in 1977-78 when it experienced a net gain due to the inflow from Quebec. The historical data on interprovincial migration both into and out of the province for the years 1970 to 1980 are presented in Table 37.

For the purposes of this report, the projections of interprovincial migration for the years 1981 to 1986 were obtained from Statistics Canada and are presented in Table 38. These projections assume that the shift in population from Ontario to Alberta and British Columbia will continue throughout the projection period.

The estimates of interprovincial migrants who will enter the labour force in Ontario and their occupational composition were obtained from Statistics Canada. The data were grouped according to the level of formal education or years of special vocational training in occupational clusters defined in Chapter I.

TABLE 37

COMPONENTS OF INTERPROVINCIAL MIGRATION:

ONTARIO, 1970-71 TO 1979-80

Year	In-migration	Out-migration	Net Migration
1970-71	128,500	81,200	47,300
1971-72	109,200	95,100	14,100
1972-73	96,000	95,000	1,000
1973-74	104,700	107,600	-2,900
1974-75	85,000	114,500	-29,500
1975-76	81,100	102,300	-21,200
1976-77	92,600	100,600	-8,000
1977-78	107,100	97,000	10,100
1978-79	93,900	102,000	-8,100
1979-80[a]	90,700	110,300	-19,600

Note : a. Preliminary Data

Source: Statistics Canada, International and Interprovincial Migration in Canada, Cat. No. 91-208, (Ottawa)

TABLE 38

PROJECTIONS OF THE COMPONENTS OF MIGRATION

ONTARIO, 1980-81 TO 1985-86

Year	Interprovincial Migration			International Migration			Total Net Migration
	In-Migration	Out-Migration	Net-Migration	Immigration	Emigration	Net-Migration	
1980-81	85,000	115,000	-30,000	60,800	33,800	27,000	-3,000
1981-82	85,000	115,000	-30,000	60,800	33,800	27,000	-3,000
1982-83	90,000	110,000	-20,000	60,800	33,800	27,000	7,000
1983-84	90,000	110,000	-20,000	60,800	33,800	27,000	7,000
1984-85	100,000	110,000	-10,000	60,800	33,800	27,000	17,000
1985-86	110,000	110,000	0	60,800	33,800	27,000	27,000

Source: Unpublished data from Statistics Canada

The projections by level of education and/or training of net interprovincial migrants (in-migrants minus out-migrants) destined to the labour force are provided in Table 39 and show that between 1981 and 1986 there will be a net out-migration of 67,500 persons from Ontario to other provinces. The occupational composition of these out-migrants by level of education and/or training is as follows:

- 2,000 in occupations primarily filled by university graduates;
- 6,700 in occupations primarily filled by college or university graduates;
- 4,600 in occupations primarily filled by college graduates;
- 14,500 in occupations normally not requiring college or university graduation;
- 19,500 in highly skilled blue-collar occupations;
- 13,100 in medium skilled blue-collar occupations;
- 7,100 in low skilled blue-collar occupations.

International Migration

The data presented in Table 40 show that the number of immigrants to Canada declined from a high of 214,000 in 1973-74 to a low of 82,000 in 1978-79. The proportion of those immigrants destined for Ontario also declined from a high of 56 per cent in 1973-74 to only 46 per cent in 1979-80. While the number of immigrants coming to Ontario has declined, emigration from Ontario to other countries has remained relatively stable at between 30,000 to 40,000 per year during the 1970-80 period. As a result, net immigration (immigration minus emigration) to Ontario from outside Canada declined from a high of 81,000 in 1973-74 to only 5,000 in 1978-79.

For the purposes of this report, the projections of net international migration to Ontario for the years 1981 to 1986 were obtained from Statistics Canada. These projections assume a net inflow of approximately 162,000 persons in all age groups from outside Canada to Ontario between 1981 and 1986. The projections of the proportion of these 162,000 persons who will enter the labour force and the educational attainment levels of the projected labour force entrants were obtained in the manner described in the previous section

TABLE 39

PROJECTIONS OF POTENTIAL LABOUR SUPPLY FROM
NET INTERPROVINCIAL MIGRATION BY EDUCATION LEVEL
ONTARIO, 1980-81 TO 1985-86

EDUCATION LEVEL	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	Total 1981 to 1986
WHITE-COLLAR OCCUPATIONS: TOTAL	-8,200	-8,400	-5,200	-5,500	-2,000	1,500	-27,800
Primarily Filled By University Graduates	-700	-700	-400	-400	-100	300	-2,000
Primarily Filled By University Graduates or College or Certified Professionals	-2,400	-2,400	-1,300	-1,400	-200	1,000	-6,700
Primarily Filled By College Graduates	-1,300	-1,400	-900	-900	-300	200	-4,600
Normally Not Requiring College or University Graduation	-3,800	-3,900	-2,600	-2,800	-1,400	0	-14,500
BLUE-COLLAR OCCUPATIONS: TOTAL	-9,200	-9,200	-7,100	-7,000	-4,800	-2,400	-39,700
Highly Skilled	-4,500	-4,500	-3,400	-3,400	-2,300	-1,400	-19,500
Medium Skilled	-2,900	-2,900	-2,400	-2,400	-1,700	-800	-13,100
Low Skilled	-1,800	-1,800	-1,300	-1,200	-800	-200	-7,100
TOTAL: WHITE-COLLAR AND BLUE-COLLAR	-17,400	-17,600	-12,300	-12,500	-6,800	-900	-67,500

TABLE 40

COMPONENTS OF INTERNATIONAL MIGRATION:
CANADA AND ONTARIO, 1970-71 TO 1979-80

Year	Immigration			Emigration			Net Migration	
	Canada	Ontario	Ontario As a percentage of Canada	Canada	Ontario	Ontario As a percentage of Canada	Canada	Ontario
1970-71	138,100	73,800	53.44	78,200	30,800	39.39	59,900	43,000
1971-72	117,800	62,700	53.23	66,100	30,200	45.69	51,700	32,500
1972-73	130,400	69,300	53.14	62,300	28,500	45.75	68,100	40,800
1973-74	214,300	119,800	55.90	84,000	38,400	45.71	130,300	81,400
1974-75	212,900	115,700	54.34	79,400	36,300	45.72	133,500	79,400
1975-76	165,600	83,800	50.60	65,400	29,900	45.72	100,200	53,900
1976-77	142,200	68,300	48.03	69,600	32,200	46.26	72,600	36,100
1977-78	106,500	52,000	48.83	78,500	33,400	42.55	28,000	18,600
1978-79	82,100	39,800	48.48	77,900	34,300	44.03	4,200	5,500
1979-80[a]	134,000	61,000	45.52	77,500	34,100	44.00	56,500	26,900

Note : [a]Preliminary Data
Source: Statistics Canada, International and Interprovincial Migration in Canada, Cat. No. 91-208, (Ottawa)

and are presented in Table 41. These projections show that there will be a net immigration to the Ontario labour force of 82,400 persons between 1981 and 1986. The educational attainment of these immigrants will be as follows:

- 4,200 in occupations primarily filled by university graduates;
- 13,200 in occupations primarily filled by university or college graduates;
- 7,100 in occupations primarily filled by college graduates;
- 19,600 in occupations normally not requiring college or university graduation;
- 17,300 in highly skilled blue-collar occupations;
- 11,600 in medium skilled blue-collar occupations;
- 9,400 in low skilled blue-collar occupations.

6.e. The Household Sector

In addition to the formal education sector and interprovincial and international migration, another potential source of labour supply is the household sector. The projections of potential labour supply from the household sector have been estimated as a residual. Briefly, net additions to the labour force are the result of the sum of the net flows to the labour force from the education sector, interprovincial and international migration and household sector minus deaths and retirements from the labour force.

Projections of net additions to the labour force and new entrants from the education sector and net interprovincial and international migration were presented in the previous sections. Attrition from the labour force due to deaths and retirements was calculated in the manner described in Chapter I, section 5. Since the net flow from the household sector to the labour force is the only unknown, estimates of the labour supply from this source for the projection period 1981-86 were obtained as a residual.

There is no information regarding the educational attainment of the labour force entrants from the household sector. A large number of the labour force entrants are likely to be adult women in the 25-to-64 age group. Data on the educational attainment of adult women who were not in the labour force in

TABLE 41

PROJECTIONS OF POTENTIAL LABOUR SUPPLY FROM
NET INTERNATIONAL MIGRATION BY EDUCATION LEVEL
ONTARIO, 1980-81 TO 1985-86

EDUCATION LEVEL	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	Total 1981 to 1986
WHITE-COLLAR OCCUPATIONS: TOTAL	7,000	7,300	7,300	7,300	7,600	7,600	44,100
Primarily Filled by University Graduates	700	700	700	700	700	700	4,200
Primarily Filled by University Graduates or College or Certified Professionals	2,100	2,200	2,200	2,200	2,200	2,300	13,200
Primarily Filled by College Graduates	1,100	1,200	1,200	1,200	1,200	1,200	7,100
Normally Not Requiring College or University Graduation	3,100	3,200	3,200	3,200	3,500	3,400	19,600
BLUE-COLLAR OCCUPATIONS: TOTAL	6,200	6,300	6,400	6,400	6,500	6,500	38,300
Highly Skilled	2,800	2,900	2,900	2,900	2,900	2,900	17,300
Medium Skilled	1,900	1,900	1,900	1,900	2,000	2,000	11,600
Low Skilled	1,500	1,500	1,600	1,600	1,600	1,600	9,400
TOTAL: WHITE-COLLAR AND BLUE-COLLAR	13,200	13,600	13,700	13,700	14,100	14,100	82,400

1980 was obtained from Statistics Canada. This information was used to distribute the estimates of labour force entrants from the household sector by level of education. These projections show that between 1981 and 1986, 319,000 persons will be available to the labour market in Ontario from the household sector. Their educational attainments are as follows:

- 16,800 will have university education;
- 28,600 will have college education;
- 16,600 will have some post-secondary education;
- 167,300 will have high school education;
- 89,700 will have less than 8 years of education.

7. Summary of the Total Labour Supply in Ontario

The projections of the total labour supply in Ontario for the period 1981-86 from the education sector, household sector and net interprovincial and international migration are summarized in Table 42. The highlights of these projections are as follows:

(i) Between 1981 and 1986, the total labour supply in Ontario is projected to be just over one million persons.

(ii) The formal education sector will provide roughly 65 per cent (approximately 647,100 persons) of the total labour supply in Ontario. The household sector will contribute nearly 32 per cent (319,000 persons) of the total labour supply and approximately 8 per cent (82,400 persons) will come from net international migration. Ontario will lose 67,500 workers to other provinces during the projection period.

(iii) The educational achievement of the 647,100 new entrants to the labour force from the formal education sector is projected to be as follows:

- 17.4 per cent or 112,300 will have completed a university degree;

TABLE 42

PROJECTIONS OF TOTAL POTENTIAL LABOUR SUPPLY IN WHITE- AND BLUE-COLLAR OCCUPATIONS BY SOURCE, EDUCATION/TRAINING, ONTARIO: 1981-1986

Sources of Labour Supply	White-Collar Occupations					Blue-Collar Occupations				Total
	Univ.	Univ. or CAATS	CAATS	H.S. grads. & Some Post Secondary	Total White	Highly Skilled	Medium Skilled	Low Skilled	Total Blue	
1. Education Sector										
University	112,300	-	-	62,900	175,200	-	-	-	-	175,200
CAATS	-	-	65,700	58,400	124,100	1,500	4,500	-	6,000	130,100
Secondary Schools	-	-	-	175,400	175,400	-	-	166,400	166,400	341,800
Private Vocational Schools	-	-	-	-	-	N.A.	N.A.	N.A.	N.A.	N.A.
2. Other Training Programs										
Apprenticeship (Regulated)	-	-	-	-	-	31,100	-	-	31,100	31,100[a]
Apprenticeship (Not Regulated)	-	-	-	-	-	4,900	-	-	4,900	4,900[a]
Modular	-	-	-	-	-	16,800	-	-	16,800	16,800[a]
Training-in-Industry	-	-	-	-	-	N.A.	N.A.	N.A.	N.A.	N.A.
CMTP	-	-	-	-	-	N.A.	N.A.	N.A.	N.A.	N.A.
CMITP	-	-	-	-	-	N.A.	N.A.	N.A.	N.A.	N.A.
3. Armed Forces	2,200	-	-	6,600	8,800	8,700	6,500	-	15,200	24,000
4. Migration										
Inter-Provincial	-2,000	-6,700	-4,600	-14,500	-27,800	-19,500	-13,000	-7,100	-39,700	-67,500
International	4,200	13,200	7,100	19,600	44,100	17,300	11,600	9,400	38,300	82,400
5. Household Sector	16,800	-	28,600	183,900	229,300	-	-	89,700	89,700	319,000
TOTAL	133,500	6,500	96,800	492,300	729,100[b]	60,800	9,500	258,400	328,700[b]	1,005,000[c]

NOTE: Since "Other Training Programs" provide upgrading or retraining to persons already in the labour force, they do not increase the actual labour supply. Therefore, the figures indicated by the superscript "a" are not counted as part of the total labour supply estimate, i.e., grand total shown by superscript "c". Similarly, the figure marked with superscript "b" at the bottom row of the table would not add up to this grand total because they represent those who are already members of the labour force while acquiring higher level skills.

- 11.1 per cent or 71,700 will have completed a college education;
- 18.7 per cent or 121,300 will have completed some post-secondary education;
- 27.1 per cent or 175,400 will have completed grade 12 or 13;
- 25.7 per cent or 166,400 will have less than grade 12 education.

(iv) The educational attainment of the 319,000 persons who will enter the labour force over the 1981-86 period from the household sector is projected to be as follows:

- 16,800 will have university education;
- 28,600 will have college education;
- 16,600 will have some post-secondary education;
- 167,300 will have high school education;
- 89,700 will have less than 8 years of education.

(v) In addition to the new entrants to the labour force from various sources, our projections show that between 1981 and 1986, 52,800 trainees would complete an apprenticeship or modular training program and would be qualified to enter the highly skilled blue-collar occupations. The distribution of apprenticeship and modular training completions by broad occupation groups over the 1981-86 period is projected to be as follows:

- 25.6 per cent or 13,500 in construction trades;
- 25.6 per cent or 13,500 in automotive trades;
- 6.2 per cent or 3,300 in service trades;
- 12.9 per cent or 6,800 in mining;
- 14.2 per cent or 7,500 as stationary engineers;
- 6.2 per cent or 3,300 in industrial trades;
- 9.3 per cent or 4,900 in non-regulated trades.

CHAPTER III

IMBALANCES BETWEEN PROJECTED MANPOWER REQUIREMENTS AND LABOUR SUPPLY: ONTARIO, 1981 TO 1986

This chapter provides a comparison of the projected manpower requirements presented in Chapter I and the total labour supply presented in Chapter II and thus identifies the areas of potential imbalances in Ontario's labour market during the 1981-86 period. It also examines the available evidence on recent labour market experience of university and college graduates in Ontario.

The chapter begins with a comparison of the projected labour force and employment to determine the anticipated level of unemployment, and the unemployment rates, during the projection period. This is followed by a discussion of the potential imbalances between total job openings and labour supply both at the aggregate level and for white- and blue-collar occupations by level of education and training. It concludes with a summary of the principal areas of imbalances thus identified.

1. The Unemployment Rate

One way of examining the labour market imbalances is to make a year-by-year comparison of the projected employment and the labour force in Ontario. The imbalances between these figures provide an estimate of the number of persons who may be unemployed and the expected unemployment rate.

The projections of employment (medium-growth scenario) and the labour force (Projection II) for Ontario between 1981 and 1986 are presented in Table 43. These projections indicate that the unemployment rate in Ontario will drop from 6.9 per cent in 1980 to 6.4 per cent in 1981, rise to 6.7 per cent

TABLE 43

ACTUAL AND PROJECTED EMPLOYMENT, LABOUR FORCE, AND UNEMPLOYMENT IN ONTARIO: 1975 TO 1986

Year	Total Employment ('000s)	Total Labour Force ('000s)	Change from Previous Year		Number Unemployed ('000s)	Unemployment Rate (%)
			Employment ('000s)	Labour Force ('000s)		
Actual						
1975[a]	3,576	3,818	--	--	242	6.3
1976[a]	3,645	3,885	69	67	240	6.2
1977[a]	3,717	3,994	69	109	277	6.9
1978[a]	3,847	4,147	133	153	300	7.2
1979[b]	4,008	4,289	161	142	281	6.6
1980[b]	4,066	4,366	58	77	300	6.9
Projected:						
1981	4,191[c]	4,479[d]	125	113	288	6.4
1982	4,279	4,585	103	106	306	6.7
1983	4,393	4,687	114	102	294	6.3
1984	4,508	4,783	115	96	275	5.7
1985	4,616	4,877	108	94	261	5.4
1986	4,729	4,965	113	88	236	4.8

Sources:
a. Statistics Canada, The Labour Force.
b. Statistics Canada, The Labour Force, Cat. No. 71-001 (Ottawa: Monthly, December 1979 and December 1980).
c. Medium-Growth Scenario, see Table 9 in Chapter I.
d. Projection II, see Table 22 in Chapter II.

in 1982, and gradually drop thereafter to 4.8 per cent by 1986.[1] This implies that the growth in the labour force will be less rapid than the growth in employment. In other words, Ontario will experience a relatively tight labour market over the projection period.

2. Total Job Openings and Labour Supply

Another way of looking at the imbalance question is to examine the total job openings and the potential labour supply rather than just comparing the employment level and the labour force in each year of the projection period. Total job openings consist of job openings resulting from employment growth and those created due to deaths and retirements from the labour force, while the total labour supply comprises of new entrants to the labour force from the education sector, net migration, the armed forces and the household sector.[2] A comparison of the total job openings and total labour supply in

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[1]This projected unemployment rate for 1986 is well below the full-employment norm of 5.3 per cent postulated by the Ministry of Treasury and Economics in the 1977 Ontario budget. However, it should be noted that the levels of output and employment projected in this report may not materialize due to potential labour market bottlenecks in Ontario. If the shortage of experienced and skilled workers persists over the projection period, it is unlikely that the projected level of employment growth can be achieved over the 1981-86 period.

In addition, the projections of growth in real output and employment presented in this report do not take into account the impact of recent energy price agreement signed by the Federal and Alberta governments. The higher energy prices are likely to depress the short-run growth in real output and employment. The longer-run impact on economic growth would depend upon the investment strategies to be adopted by the oil industry and the monetary and fiscal policies to be pursued by the federal and provincial governments.

[2]Theoretically, for the purposes of computing imbalances between manpower requirements and supply, the estimate of potential labour supply should include the pool of unemployed workers and the estimate of labour demand should include the number of job vacancies. It could be argued, however, that in a dynamic labour market the number of workers counted as unemployed at any given point of time reflect only a fraction of the flows of workers into and out of employment. According to the 1977 Ontario budget document, 5.3 per cent of the unemployment is attributable to these flows. Therefore, in an accounting sense the pool of unemployed workers who could be available is equivalent to the difference between 5.3 per cent and the prevailing unemployment rate. In 1980, the average annual unemployment rate for Ontario was 6.9 per cent. Therefore, the pool of surplus labour that could be available was only 1.6 per cent. In this study we have assumed, that the difference between potential labour supply from the pool of unemployed workers and the job vacancies that might exist is likely to be very small.

Ontario for the 1981-86 period is presented in Table 44. These data show that in the medium-growth economic scenario, the total labour supply will fall short of total job openings in every year of the projection period, except 1982. In 1982, the total labour supply is projected to exceed total job openings by 25,000.

A comparison of total job openings and total labour supply at the aggregate level could conceal the potential labour market imbalance that might exist at the detailed occupational levels. Therefore, to provide a more complete picture of these potential imbalances a detailed analysis of the job openings and labour supply in white- and blue-collar occupations by level of education and training is presented below.

3. Imbalances in White-Collar Occupations

Between 1981 and 1986 all three scenarios envisage that approximately four out of every seven job openings in Ontario will be in white-collar occupations. Roughly 62 per cent of these white-collar jobs will be concentrated in two industries: trade (32 per cent), and community, business and personal services (30 per cent).

The total supply of white-collar workers during the 1981-86 period is projected to be 729,100. The number of job openings for white-collar occupations during this period in the high-growth scenario is projected to be 580,600. This means that even in the high-growth scenario labour supply will exceed the requirements by 148,500. Under the low-growth and medium-growth scenarios, there will be an over-supply of 186,500 and 162,800 workers, respectively (see Table 45).

About 31 per cent of the projected 542,600 white-collar job openings in the low-growth scenario and 29 per cent of the 580,600 job openings in the high-growth scenario will be created to meet replacement needs. The proportion of job openings due to replacement needs is much higher in the manufacturing industries: almost 49 per cent in the low-growth scenario and 43 per cent in the high-growth scenario.

Within the broad category of white-collar occupations, imbalances between job openings and labour supply are examined by level of education in the following sections.

TABLE 44

PROJECTED ANNUAL TOTAL JOB OPENINGS, TOTAL LABOUR SUPPLY AND OVERALL IMBALANCES IN ONTARIO, 1981 TO 1986

Year	Projected Total Job Openings[a]	Projected Total Labour Supply[b]	Overall Surplus (+) or Shortage (-)
1981	177,900	174,500	-3,400
1982	143,800	168,800	+25,000
1983	170,100	165,600	-4,500
1984	173,700	162,600	-11,100
1985	173,500	167,700	-5,800
1986	182,200	165,600	-16,600
Total 1981-86	1,021,200[c]	1,005,000	-16,200

Note: a. Medium-Growth Scenario, see Table 9 in Chapter I.

b. Projection II, see Table 22 in Chapter II.

c. Figures may not add up to totals because of rounding.

TABLE 45

A COMPARISON OF PROJECTED REQUIREMENTS AND SUPPLY BY LEVEL OF EDUCATION: ONTARIO

1981 TO 1986

Projected Total Job Openings: 1981 - 1986				Projected Total Labour Supplies: 1981 - 1986						
Education Level	Low Growth	Medium-Growth	High-Growth	Education Level	Formal Education Sector	Apprentice-ship & Modular Training	Armed Forces	Net Migration	Household Sector	Total
White-Collar Occupations: Total	542,600	566,300	580,600	White-Collar Occupations: Total	474,700	-	8,800	16,300	229,300	729,100
Primarily filled by University graduates	42,500	44,300	45,400	University Graduates	112,300	-	2,200	2,200	16,800	133,500
Primarily filled by University or College or Certified Professionals	137,100	143,100	146,700	University or College Graduates	-	-	-	6,500	-	6,500
Primarily filled by College Graduates	72,200	75,300	77,200	College Graduates	65,700	-	-	2,500	28,600	96,800
Normally not Requiring College or University Graduation	290,800	303,500	311,200	Some Post-Secondary Education & Secondary-School Graduates	296,700	-	6,600	5,100	183,900	492,300
Blue-Collar Occupations: Total	378,800	403,500	417,600	Blue-Collar Occupations: Total	172,400	52,800	15,200	-1,400	89,700	328,700
Highly Skilled	98,800	105,200	108,900	Highly Skilled	1,500	52,800	8,700	-2,200	-	60,800
Medium Skilled	50,900	54,200	56,100	Medium Skilled	4,500	-	6,500	-1,500	-	9,500
Low Skilled	229,100	244,000	252,600	Low Skilled (less than Grade 12)	166,400	-	-	2,300	89,700	258,400
Other "Unspecified" Occupations	49,900	51,400	53,000							
Total Job Openings: 1981-1986	971,200	1,021,200	1,051,200	Total Labour Supplies: 1981-1986	647,100	52,800	24,000	14,900	319,000	1,005,000[a]

[a]The individual row and column totals do not add up to the grand total. For explanation please refer to footnote in Table 42.

3.a. University and College Graduates

In terms of the imbalances between the projected requirements for and supply of persons with a college or university degree, these projections show that during the 1981-86 period there will be 251,800 job openings for persons with a college or university degree in the low-growth scenario and 269,300 in the high-growth scenario. During the same period, 236,800 persons with these qualifications will enter the labour force. These data suggest that there will be a supply shortfall of 15,000 even in the low-growth scenario, and a shortfall of 32,500 in the high-growth scenario.

It is important to note that while these projections imply an overall shortage of university and college graduates combined, there will be only 45,400 job openings that can be filled primarily by university graduates in the high-growth scenario. There would be an additonal 146,700 white-collar job openings that can be filled by either university or college graduates. The labour supply projections show that 133,500 university graduates will enter the labour market during this period. In other words, even under the high-growth scenario, at least 88,100 university graduates will be unable to find jobs which are filled primarily by university graduates and will therefore be competing for jobs that can also be filled by college graduates.

These projections show that for the 96,800 college graduates who will be entering the Ontario labour market between 1981 and 1986 there will be 72,200 job openings that these graduates can fill in the low-growth scenario, and 77,200 job openings in the high growth scenario. Even in the low-growth scenario, the remaining 24,600 college graduates can also compete for the 137,100 job openings that can be filled either by university or college graduates. In other words, the employment opportunities for college graduates appear to be more promising than those for university graduates.[3]

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[3]In a period when competition for these types of jobs is particularly strong, the operation of the labour market will tend to inflate the qualification required for the job in practice (though perhaps not as advertised). Under these conditions, the employment prospects of university graduates will be enhanced vis-a-vis those of college graduates.

This trend is already evident from the labour market experience of recent university graduates in Ontario. Detailed information on the employment experience of university graduates is available from the survey of 1976 university graduates conducted by Statistics Canada[4], and the survey of 1979 university graduates conducted by the Ontario Ministry of Colleges and Universities.[5] In addition, a study on the educational achievements and work destination of Ontario youth, conducted by Aniseff et al for the Ministry of Colleges and Universities, also provides information on the employment experience of students. The Aniseff et al study was based on a six-year follow-up of high school students who continued post-secondary education.[6] All these surveys indicate that a significant proportion of university graduates are either underemployed or employed in work that is not related to their field of study.

The concept of "underemployment" is difficult to define and even more difficult to measure.[7] In these surveys for statistical purposes, "university graduates were classified as under-employed if they had jobs that did not require a university degree".[8] According to the survey conducted by Statistics Canada, approximately one-third of the 1976 university graduates in Ontario were underemployed and their numbers increased to 39 per cent in the survey of 1979 university graduates (see Table 46). In other words, they had jobs that required only a college or secondary school education. The estimate

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[4]W. Clark and Z. Zsigmond, Job Market Reality for Post-secondary Graduates, Statistics Canada, March 1981.

[5]University Affairs Division, Employment Survey of 1979 Graduates of Ontario Universities, Ministry of Colleges and Universities, October 1980.

[6]Paul Aniseff, J. Grofried Paasche and Anton H. Turrittin, Is the Die Cast, Ministry of Education and Colleges and Universities, 1980.

[7]One aspect of this definitional problem stems from the general philosophical question of what a university education is intended for. It can be argued that general programs of study in the arts and sciences have as only part of their objective the improvement of their graduates' job prospects in the labour market. In the view of many educators (as well as students) of equal or perhaps greater importance is the personal and intellectual development of the student. In this context, the extent to which university education ought to promote employability or ought to be reflected as a qualification for entry into broad sectors of the labour market becomes somewhat unclear. The concept of underemployment among university graduates should therefore be interpreted within this broad framework.

[8]W. Clark and Zsigmond, Ibid, p. 47.

TABLE 46

ACTUAL LABOUR MARKET EXPERIENCE OF
UNIVERSITY AND COLLEGE GRADUATES IN ONTARIO, 1976 AND 1979

Employment Picture After Graduation[1]	Units	1976 Survey[a]		1979 Survey[b]
		University Graduates	College Graduates	University Graduates
Total in the Survey	No.	37,807	16,112	19,649
Total in the Labour Force	No.	35,161	15,548	13,697
Participation Rate	%	93.0	96.5	69.7
Employed Full-Time	No.	30,080	13,420	11,626
Full-time Employment Rate	%	85.5	86.3	84.9
Extent of Underemployment[2]	%	33.8	28.5	39.2
Job - Education Fit[2]				
(a) Direct	%	37.3	64.0	76.5
(b) Partial	%	41.6	22.9	
(c) Non-Related	%	21.2	13.2	23.5

Notes: 1. The table represents the employment experience of 1976 graduates in June 1978, two years after graduation and the employment experience of 1979 graduates one year after graduation.

2. The extent of underemployment and the Job-Education Fit relate only to graduates who are employed full-time.

Sources: a. W. Clark and Z. Zsigmond, Job Market Reality for Post-Secondary Graduates, Statistics Canada, Ottawa, March 1981.

b. University Affairs Division, Employment Survey of 1979 Graduates of Ontario Universities, Summary Report, Ministry of Colleges and Universities, October 1980.

of underemployment suggested by the Aniseff et al study was even higher: 53.7 per cent and 63.3 per cent for men and women respectively, with university degrees in first full-time jobs.[9]

According to these surveys, not all university graduates face similar prospects of underemployment. The 1976 university graduates in Humanities (45.7 per cent) and Social Sciences (44.3 per cent) were underemployed the most, while graduates from fields of study which are more labour-market oriented such as Education (9.8 per cent), Engineering (12.9 per cent), and the Health professions (17.5 per cent) were underemployed the least.

About 21.2 per cent of the 1976 Ontario university graduates were in jobs that were not related to their training. This figure was even higher, at 23.5 per cent, for the 1979 university graduates. By field of study, more than a quarter of the 1976 university graduates in Humanities, Social Sciences, and Agricultural and Biological Sciences were in jobs unrelated to their training.

While a large proportion of university graduates may be underemployed or employed in jobs unrelated to their field of study, shortages are and probably would continue to be experienced in certain specific fields of study. A study recently completed by the Labour Market Research Group of the Ontario Manpower Commission on manpower requirements and supply in the microelectronics industry concludes that the supply of electrical and electronics engineers and computer specialists available from Ontario universities and colleges will probably fall short of meeting the projected requirements of the microelectronics industry over the 1981-85 period.[10]

The shortage situation in certain specific fields of study could be aggravated by the fact that an increasing proportion of university graduates in Ontario is leaving the province. In fact, the 1979 survey showed that fewer of

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[9]The Aniseff et al study used the average GED (General Educational Development) scores for each occupational group to estimate the degree to which respondents with university degrees had jobs that did not require the level of education they had attained.

[10]Professional and Technical Manpower Requirements and Supplies in the Microelectronics Industry in Ontario: 1981-to-1985, Labour Market Research Group, Ontario Manpower Commission, May 1981.

the 1979 university graduates (84.5 per cent) remained in Ontario compared with the 1976 university graduates (89.0 per cent).

The survey of 1976 college graduates conducted by Statistics Canada shows that underemployment among college graduates was not as prevalent as among university graduates. Only 28.5 per cent of the 1976 college graduates were underemployed compared with 33.8 per cent of university graduates.[11] Also, since college programs tend to be more labour market oriented, only 13.2 per cent of the 1976 college graduates were in jobs not related to their training compared to 21.2 per cent of the 1976 university graduates (Table 46).

Not only are the overall prospects for employment for college graduates during the projection period promising but in certain fields (especially the technology programs) the requirements are likely to exceed the supply. The Commission's study on the microelectronics industry indicates that the supply of draftsmen, engineering technicians and technologists, and other computer-related technicians available from the community colleges in Ontario, is likely to fall short of the projected requirements of this industry over the 1981-85 period.

The shortages situation could be aggravated by the fact that, as in the case of university graduates, many college graduates in Ontario are leaving the province. The survey of 1976 Ontario college graduates shows that Ontario had experienced a net loss of 5 per cent (864) of its 1976 college graduates as a result of this out-migration.

3.b. Other White-Collar Occupations

In relation to job openings which normally do not require a college or university degree, only 311,200 job openings would become available during the projection period in the high-growth scenario. During this period, 492,300 persons will be entering the white-collar labour force with some or no post-secondary education. Therefore, even under the high-growth scenario Ontario will be experiencing an oversupply of 181,100 workers in occupations not requiring a collge or university degree. The surplus of labour in these occupations will increase to 188,800 and 201,500 in the medium- and low-growth scenarios, respectively.

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[11] W. Clark and Z. Zsigmond, Ibid.

4. Imbalances in Blue-Collar Occupations

The total labour supply of blue-collar workers during the 1981-86 period in Ontario is projected to be 328,700. The number of job openings for blue-collar occupations during this period under the low-growth scenario is projected to be 378,800. This means that even under this scenario at the aggregate level the supply will fall short of requirements by 50,100. In the medium-growth and high-growth scenarios the short fall will increase to 74,800 and 88,900 workers, respectively (see Table 45).

Between 1981 and 1986 more than 42 per cent of the 378,800 blue-collar job openings in the low-growth scenario, and 38 per cent of the 417,600 blue-collar job openings in the high-growth scenario, will become available because of replacement needs.

The imbalances in blue-collar occupations by level of skill are discussed below:

4.a. Highly Skilled Blue-Collar Occupations

In this study, the highly skilled blue-collar occupations have been defined as those that require more than two years of training. The number of job openings for these highly skilled tradespeople during the projection period will range from 98,800 in the low-growth scenario to 108,900 in the high-growth scenario.

During this period a total of 63,000 persons will be entering the highly skilled labour force from Ontario's community colleges, apprenticeship and modular training programs, and from the armed forces.

The number of graduates from community colleges entering the highly skilled blue-collar occupations during this period will be 1,500, a mere two per cent of the total college graduates entering the labour market from the education sector in Ontario, and 52,800 will come from the apprenticeship and modular training programs. The balance of 8,700 will come from the armed forces.

Unlike the experience of past years, international migration will not be a significant source of labour supply for highly skilled workers during the projection period. In addition, the increasing trend toward out-migration of highly skilled workers from Ontario will result in Ontario experiencing a net loss of 2,200 highly skilled workers during the projection period due to both international and interprovincial migration.

The total labour supply of highly skilled workers through the apprenticeship and modular training programs, the armed forces, and through net migration is projected to be 60,800. This suggests that even in the low-growth scenario there will be a shortfall of 38,000 workers. This shortfall will increase to 48,100 in the high-growth scenario.

The shortage of highly skilled workers was evident in a survey on current manpower shortages and the future skill requirements for the manufacturing industries in Ontario, conducted by the Labour Market Research Group of the Ontario Manpower Commission in July and August 1979[12]. The survey indicated that the shortage of manpower in the manufacturing industries was concentrated in the following highly skilled blue-collar occupations: machine operators, general machinists, tool and die makers, mould makers, welders, welder fitters, assembler fitters, and electricians.

The survey results showed that the current shortages would worsen in the future as the in-flow of skilled immigrants declines, leading to an increasing demand on domestic sources. Many employers thought that the education system had failed to produce the industrial skills and problem-solving ability needed by the industry.

It is important to note, however, that there are many persons who are being trained by employers through on-the-job training who are not included in the data presented in this report. Very little is known about the nature and magnitude of such in-house training in industry. Therefore, it was not possible to estimate the potential supply of highly skilled workers that could be available from this source. It is, therefore, likely that our estimates of the magnitude of shortages in the highly skilled occupations are overstated.

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[12] Manpower Requirements and Hiring Plans of Ontrio Employers in Manufacturing Industries, Labour Market Research Group, Ontario Manpower Commission, 1979.

4.b. Medium Skilled Blue-Collar Occupations

In this study, the medium skilled blue-collar occupations are defined as those that require up to two years of training. The total number of job openings for these skilled tradespeople during the projection period will range from 50,900 in the low-growth scenario to 56,100 in the high-growth scenario.

The major sources of labour supply of medium skilled blue-collar workers are the Canada Manpower Training Programs and in-house on-the-job training in industry. However, because of the lack of data we were unable to make projections of potential labour supply of highly and medium skilled workers that could be available through these sources.

The other sources of supply for medium skilled blue-collar workers are the community colleges and the armed forces. During the 1981-86 period, 4,500 medium skilled blue-collar workers would enter the labour force from community colleges in Ontario and 6,500 from the armed forces.[13] Ontario will experience a net loss of 1,500 medium skilled workers as a result of international and interprovincial migration during the projection period. The total supply of medium skilled workers from these sources will therefore number only 9,500 during the projection period.

4.c. Low Skilled Blue-Collar Occupations

Job openings in low skilled blue-collar occupations are usually filled by persons with less than grade 12 education. Between 1981 and 1986, the total job openings in these occupations will number 279,000 in the low-growth scenario and 305,600 in the high-growth scenario.[14] A total of 258,400 persons with less than grade 12 education would be available to the labour force in

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[13]The estimate of 4,500 from the Community College does not include the potential labour supply that may be available through the CMTP, CMITP, and TIBI programs.

[14]The numbers of job openings in other blue-collar occupations also include those for other "unspecified" occupations. If the other "unspecified" occupations are excluded, the shortage situation described in this section will be reversed to a surplus.

Ontario during this period. They include 166,400 school leavers, 2,300 net migrants, and 89,700 from the household sector.[15]

These figures suggest that in all three scenarios there will be a shortage of low skilled blue-collar workers to fill the available job openings. Usually the low skilled blue-collar occupations are characterised by simultaneous shortages and surpluses. People are often reluctant to enter these jobs because of the low wages, poor working conditions, and limited chances for advancement. As a result, it is quite possible that there may be a surplus of workers with few skills to offer, while at the same time shortages exist in blue-collar occupations for which they are qualified.

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[15]It should be pointed out that while Ontario is experiencing an outflow of highly skilled and skilled persons there is an inflow of persons with less than grade 12 education.

APPENDICES

APPENDIX I-A

SUMMARY OF THE CANADIAN ECONOMIC OUTLOOK

INSTITUTE FOR POLICY ANALYSIS, UNIVERSITY OF TORONTO
FOCUS80F MANPOWER COMMISSION LOW GROWTH SCENARIO; JULY 1981

		1979 ACTUAL	1980 SOLUTION	1981 SOLUTION	1982 SOLUTION	1983 SOLUTION	1984 SOLUTION	1985 SOLUTION	1986 SOLUTION
NOMINAL GNP COMPONENTS									
	MILLIONS OF CANADIAN DOLLARS								
PRIVATE CONSUMPTION	(CV)	150489.	166244.	188237.	211036.	237756.	266574.	295453.	326813.
		(11.18)	(10.47)	(13.23)	(12.11)	(12.66)	(12.12)	(10.83)	(10.61)
PUBLIC CONSUMPTION	(GCV)	51215.	57239.	64161.	72782.	81666.	91465.	102635.	115262.
		(7.84)	(11.76)	(12.09)	(13.44)	(12.21)	(12.00)	(12.21)	(12.30)
PRIVATE INVESTMENT	(IFBV)	51991.	59684.	65446.	75963.	89083.	102134.	120760.	142074.
		(15.35)	(14.80)	(9.65)	(16.07)	(17.27)	(14.65)	(18.24)	(17.65)
PUBLIC INVESTMENT	(GIV)	7799.	8414.	8924.	9971.	11539.	13311.	15457.	17970.
		(8.35)	(7.89)	(6.06)	(11.73)	(15.72)	(15.36)	(16.13)	(16.25)
INVENTORY CHANGE	(IIBV)	4384.	-455.	1962.	2907.	5236.	5278.	3628.	3395.
EXPORTS	(XV)	76624.	89769.	103263.	120402.	138640.	155648.	179522.	206736.
		(22.10)	(17.16)	(15.03)	(16.60)	(15.15)	(12.27)	(15.34)	(15.16)
IMPORTS	(MV)	82384.	92463.	109353.	126017.	143090.	160515.	184625.	213815.
		(21.44)	(12.23)	(18.27)	(15.24)	(13.55)	(12.18)	(15.02)	(15.81)
GROSS NATIONAL PRODUCT	(GNPV)	260305.	288137.	321727.	366004.	419657.	472587.	531380.	596834.
		(13.32)	(10.69)	(11.66)	(13.76)	(14.66)	(12.61)	(12.44)	(12.32)
REAL GNP COMPONENTS									
	MILLIONS OF 1971 CANADIAN DOLLARS								
PRIVATE CONSUMPTION	(C)	81140.	81603.	83863.	85652.	87492.	90052.	92493.	95176.
		(1.90)	(0.57)	(2.77)	(2.13)	(2.15)	(2.93)	(2.71)	(2.90)
PUBLIC CONSUMPTION	(GC)	22404.	22545.	22698.	23187.	23614.	23911.	24442.	25102.
		(-1.00)	(0.63)	(0.68)	(2.16)	(1.84)	(1.26)	(2.22)	(2.70)
PRIVATE INVESTMENT	(IFB)	24740.	25863.	26209.	27679.	28859.	29823.	31818.	33792.
		(5.12)	(4.54)	(1.34)	(5.61)	(4.26)	(3.34)	(6.69)	(6.20)
PUBLIC INVESTMENT	(GI)	3774.	3798.	3787.	3877.	4007.	4163.	4325.	4492.
		(-0.89)	(0.64)	(-0.30)	(2.38)	(3.36)	(3.89)	(3.89)	(3.88)
INVENTORY CHANGE	(IIB)	1958.	-759.	99.	540.	1275.	1231.	708.	586.
EXPORTS	(X)	31622.	31937.	33103.	34815.	36092.	37187.	39309.	41470.
		(2.61)	(1.00)	(3.65)	(5.17)	(3.67)	(3.04)	(5.70)	(5.50)
IMPORTS	(M)	36319.	35298.	37231.	39127.	39855.	40673.	43300.	46745.
		(5.89)	(-2.81)	(5.48)	(5.09)	(1.86)	(2.05)	(6.46)	(7.96)
GROSS NATIONAL PRODUCT	(GNP)	129439.	129558.	132159.	136254.	141114.	145325.	149424.	153504.
		(2.73)	(0.09)	(2.01)	(3.10)	(3.57)	(2.98)	(2.82)	(2.73)

BALANCE OF PAYMENTS

MILLIONS OF CURRENT CANADIAN DOLLARS

EXPORTS OF GOODS	(XGV)	65170.	76534.	88221.	103127.	119013.	133284.	154232.	177980.
		(23.54)	(17.44)	(15.27)	(16.90)	(15.40)	(11.99)	(15.72)	(15.40)
IMPORTS OF GOODS	(MGV)	61198.	68510.	81923.	94863.	109215.	122642.	142593.	167230.
		(24.51)	(11.95)	(19.58)	(15.80)	(15.13)	(12.29)	(16.27)	(17.28)
BALANCE OF TRADE	(BPT)	3972.	8024.	6298.	8264.	9797.	10643.	11640.	10751.
CURRENT ACCOUNT BALANCE	(BPC)	-5098.	-1377.	-4913.	-4436.	-3253.	-3679.	-3883.	-5745.
NET LONG-TERM CAPITAL	(BPLN)	2838.	2356.	4208.	3170.	3378.	6160.	6046.	5420.
NET SHORT-TERM CAPITAL	(BPSN)	3949.	-952.	705.	1266.	-125.	-2481.	-2163.	325.
CHANGE IN RESERVES	(BPRES)	1908.	244.	0.	0.	0.	0.	0.	0.
EXCHANGE RATE ($C/$US)	(RXUS)	1.17	1.17	1.18	1.16	1.14	1.13	1.13	1.12
		(2.70)	(-0.14)	(1.30)	(-2.31)	(-1.25)	(-1.04)	(-0.30)	(-0.71)

PRICE INDEXES

1971 = 1.00

GNP DEFLATOR	(PGNP)	2.01	2.22	2.43	2.68	2.97	3.25	3.56	3.89
		(10.33)	(10.62)	(9.41)	(10.32)	(10.74)	(9.35)	(9.35)	(9.34)
PRIVATE CONSUMPTION DEFL	(PC)	1.85	2.04	2.24	2.46	2.72	2.96	3.19	3.43
		(9.12)	(9.83)	(10.20)	(9.75)	(10.30)	(8.93)	(7.91)	(7.49)
CONSUMER PRICE INDEX	(CPI)	1.91	2.10	2.34	2.58	2.86	3.14	3.41	3.69
		(9.13)	(10.10)	(11.15)	(10.41)	(10.91)	(9.58)	(8.68)	(8.27)
EXPORT DEFLATOR	(PX)	2.42	2.81	3.12	3.46	3.84	4.19	4.57	4.99
		(19.09)	(16.04)	(10.98)	(10.87)	(11.07)	(8.95)	(9.12)	(9.16)
IMPORT DEFLATOR	(PM)	2.27	2.62	2.94	3.22	3.59	3.95	4.26	4.57
		(14.86)	(15.47)	(12.14)	(9.65)	(11.48)	(9.91)	(8.04)	(7.29)
TERMS OF TRADE (PX/PM)		1.07	1.07	1.06	1.07	1.07	1.06	1.07	1.09
		(3.66)	(0.48)	(-1.00)	(1.07)	(-0.34)	(-0.89)	(1.03)	(1.70)
TERMS OF TRADE -GOODS-		1.05	1.05	1.04	1.05	1.04	1.05	1.07	1.09
		(4.37)	(-0.43)	(-0.65)	(0.88)	(-0.50)	(0.30)	(1.86)	(2.49)
TERMS OF TRADE -SERVICES-		1.10	1.11	1.10	1.14	1.17	1.12	1.12	1.12
		(0.0)	(0.90)	(-0.27)	(3.18)	(2.51)	(-3.74)	(-0.76)	(0.35)
ANN. WAGE, PRIVATE SECTOR EMPLOYEES ($000'S)	(WPAA)	12.351	13.358	14.980	16.810	18.714	20.859	23.174	25.434
		(7.30)	(8.15)	(12.15)	(12.22)	(11.32)	(11.47)	(11.10)	(9.75)

APPENDIX I-A (CONT'D)

EMPLOYMENT AND UTILIZATION RATES								
		THOUSANDS OF PERSONS						
LABOUR FORCE	(LF)	11204.	11523.	11775.	12095.	12399.	12688.	12973.	13248.
		(2.97)	(2.84)	(2.19)	(2.72)	(2.51)	(2.34)	(2.24)	(2.12)
EMPLOYED	(LE)	10368.	10655.	10962.	11137.	11409.	11671.	11937.	12206.
		(3.99)	(2.77)	(2.88)	(1.59)	(2.45)	(2.29)	(2.28)	(2.26)
		PER CENT							
PARTICIPATION RATE	(RP)	63.22	64.00	64.42	65.27	66.09	66.83	67.51	68.12
UNEMPLOYMENT RATE	(RU)	7.47	7.53	6.90	7.92	7.98	8.02	7.98	7.86
NATURAL UNEMPLOY'T RATE	(RUNAT)	5.78	5.38	5.28	5.20	5.11	5.03	4.96	4.90
CAPACITY UTILIZATION RATE	(RHO)	84.90	79.27	76.25	77.37	76.86	76.91	79.85	82.72

MONETARY AND FISCAL									
		MILLIONS OF CURRENT CANADIAN DOLLARS							
MONEY SUPPLY (BROAD)	(MONM2)	114120.	134635.	148295.	164014.	181359.	205125.	233882.	264194.
		(19.41)	(17.98)	(10.15)	(10.60)	(10.58)	(13.10)	(14.02)	(12.96)
MONEY SUPPLY (NARROW)	(MONM1)	23283.	24392.	25730.	27227.	28911.	31349.	34252.	36799.
		(6.70)	(4.76)	(5.49)	(5.82)	(6.19)	(8.43)	(9.26)	(7.44)
GOV'T SURPLUS (OVERALL)	(GBAL)	-4540.	-5621.	-6788.	-6468.	-2082.	-4427.	-5345.	-4638.
		PER CENT							
BANK OF CANADA RATE	(RMBC)	12.19	12.89	14.54	14.28	13.65	12.23	11.24	11.10
YIELD ON 90-DAY FINANCE COMPANY PAPER	(RMF)	12.16	12.77	12.29	13.86	14.06	12.62	11.47	10.90
YIELD ON 1-3 YR GOV'T OF CANADA BONDS	(RMBG1	10.83	11.84	12.47	13.03	13.65	12.79	11.57	11.11
YIELD ON 10-YEAR & OVER GOV'T CANADA BONDS	(RMBG10)	10.33	12.37	12.62	13.35	13.84	13.22	12.54	11.87
REAL RATE ON FINANCE CO. PAPER		2.41	6.00	2.38	4.26	4.70	2.56	2.54	2.84
REAL RATE ON 1-5 YR GOV'T OF CANADA BONDS		1.36	5.23	2.57	3.35	4.22	2.52	2.48	3.16
REAL RETURN (AFTER TAX) ON NEW INVESTMENT		9.16	8.82	7.33	7.83	7.50	7.20	7.80	8.43
PERSONAL SAVING RATE	(RSP)	10.45	10.68	10.29	10.38	10.41	10.47	10.47	10.45
		RATIO							
VELOCITY OF MONEY (BROADLY-DEFINED)	(VELM2)	2.28	2.14	2.17	2.23	2.31	2.31	2.27	2.26
VELOCITY OF MONEY (NARROWLY-DEFINED)	(VELM1)	11.19	11.82	12.51	13.45	14.52	15.09	15.53	16.23

NOTE - PERCENTAGE CHANGES ARE WRITTEN IN PARENTHESES

APPENDIX I-B

SUMMARY OF THE CANADIAN ECONOMIC OUTLOOK

INSTITUTE FOR POLICY ANALYSIS, UNIVERSITY OF TORONTO
FOCUS80F MANPOWER COMMISSION MEDIUM GROWTH SCENARIO; JULY 1981

		1979 ACTUAL	1980 SOLUTION	1981 SOLUTION	1982 SOLUTION	1983 SOLUTION	1984 SOLUTION	1985 SOLUTION	1986 SOLUTION
NOMINAL GNP COMPONENTS									
	MILLIONS OF CANADIAN DOLLARS								
PRIVATE CONSUMPTION	(CV)	150489.	166244.	188866.	211994.	238981.	269188.	299235.	331760.
		(11.18)	(10.47)	(13.61)	(12.25)	(12.73)	(12.64)	(11.16)	(10.87)
PUBLIC CONSUMPTION	(GCV)	51215.	57239.	64236.	72925.	82086.	92328.	103894.	116927.
		(7.84)	(11.76)	(12.22)	(13.53)	(12.56)	(12.48)	(12.53)	(12.54)
PRIVATE INVESTMENT	(IFBV)	51991.	59684.	66409.	77055.	90434.	103971.	123026.	144803.
		(15.35)	(14.80)	(11.27)	(16.03)	(17.36)	(14.97)	(18.33)	(17.70)
PUBLIC INVESTMENT	(GIV)	7799.	8414.	8947.	9999.	11588.	13409.	15595.	18153.
		(8.35)	(7.89)	(6.33)	(11.76)	(15.89)	(15.71)	(16.30)	(16.40)
INVENTORY CHANGE	(IIBV)	4384.	-455.	2271.	3185.	5418.	5413.	3693.	3417.
EXPORTS	(XV)	76624.	89769.	105489.	122918.	141476.	159175.	183408.	210646.
		(22.10)	(17.16)	(17.51)	(16.52)	(15.10)	(12.51)	(15.22)	(14.85)
IMPORTS	(MV)	82384.	92463.	110238.	126948.	143920.	161622.	185805.	214924.
		(21.44)	(12.23)	(19.22)	(15.16)	(13.37)	(12.30)	(14.96)	(15.67)
GROSS NATIONAL PRODUCT	(GNPV)	260305.	288137.	325061.	370084.	424885.	480543.	541579.	609164.
		(13.32)	(10.69)	(12.82)	(13.85)	(14.81)	(13.10)	(12.70)	(12.48)
REAL GNP COMPONENTS									
	MILLIONS OF 1971 CANADIAN DOLLARS								
PRIVATE CONSUMPTION	(C)	81140.	81603.	84028.	85954.	87804.	90521.	93062.	95838.
		(1.90)	(0.57)	(2.97)	(2.29)	(2.15)	(3.09)	(2.81)	(2.98)
PUBLIC CONSUMPTION	(GC)	22404.	22545.	22698.	23187.	23614.	23911.	24442.	25102.
		(-1.00)	(0.63)	(0.68)	(2.16)	(1.84)	(1.26)	(2.22)	(2.70)
PRIVATE INVESTMENT	(IFB)	24740.	25863.	26549.	28024.	29207.	30173.	32160.	34126.
		(5.12)	(4.54)	(2.65)	(5.56)	(4.22)	(3.30)	(6.59)	(6.11)
PUBLIC INVESTMENT	(GI)	3774.	3798.	3787.	3877.	4007.	4163.	4325.	4492.
		(-0.89)	(0.64)	(-0.30)	(2.38)	(3.36)	(3.89)	(3.89)	(3.88)
INVENTORY CHANGE	(IIB)	1958.	-759.	193.	631.	1327.	1262.	719.	583.
EXPORTS	(X)	31622.	31937.	33697.	35444.	36669.	37744.	39811.	41890.
		(2.61)	(1.00)	(5.51)	(5.19)	(3.45)	(2.93)	(5.48)	(5.22)
IMPORTS	(M)	36319.	35298.	37591.	39513.	40217.	41036.	43609.	47014.
		(5.89)	(-2.81)	(6.50)	(5.11)	(1.78)	(2.04)	(6.27)	(7.81)
GROSS NATIONAL PRODUCT	(GNP)	129439.	129558.	132992.	137236.	142043.	146369.	150541.	154647.
		(2.73)	(0.09)	(2.65)	(3.19)	(3.50)	(3.05)	(2.85)	(2.73)

BALANCE OF PAYMENTS

MILLIONS OF CURRENT CANADIAN DOLLARS

EXPORTS OF GOODS	(XGV)	65170.	76534.	90372.	105550.	121766.	136595.	157645.	181219.
		(23.54)	(17.44)	(18.08)	(16.79)	(15.36)	(12.18)	(15.41)	(14.95)
IMPORTS OF GOODS	(MGV)	61198.	68510.	82652.	95662.	110096.	123799.	143846.	168541.
		(24.51)	(11.95)	(20.64)	(15.74)	(15.09)	(12.45)	(16.19)	(17.17)
BALANCE OF TRADE	(BPT)	3972.	8024.	7721.	9888.	11669.	12796.	13800.	12678.
CURRENT ACCOUNT BALANCE	(BPC)	-5098.	-1377.	-3545.	-2818.	-1220.	-1231.	-1146.	-2917.
NET LONG-TERM CAPITAL	(BPLN)	2838.	2356.	4354.	4123.	4893.	8314.	8975.	9133.
NET SHORT-TERM CAPITAL	(BPSN)	3949.	-952.	-810.	-1305.	-3673.	-7083.	-7829.	-6216.
CHANGE IN RESERVES	(BPRES)	1908.	244.	0.	0.	0.	0.	0.	0.
EXCHANGE RATE ($C/$US)	(RXUS)	1.17	1.17	1.18	1.16	1.14	1.13	1.13	1.12
		(2.70)	(-0.14)	(1.30)	(-2.31)	(-1.25)	(-1.04)	(-0.30)	(-0.71)

PRICE INDEXES

1971 = 1.00

GNP DEFLATOR	(PGNP)	2.01	2.22	2.44	2.70	2.99	3.28	3.60	3.94
		(10.33)	(10.62)	(9.86)	(10.31)	(10.95)	(9.76)	(9.58)	(9.50)
PRIVATE CONSUMPTION DEFL	(PC)	1.85	2.04	2.25	2.47	2.72	2.97	3.22	3.46
		(9.12)	(9.83)	(10.34)	(9.72)	(10.37)	(9.26)	(8.13)	(7.66)
CONSUMER PRICE INDEX	(CPI)	1.91	2.10	2.34	2.59	2.87	3.15	3.43	3.72
		(9.13)	(10.10)	(11.31)	(10.37)	(10.96)	(9.87)	(8.88)	(8.42)
EXPORT DEFLATOR	(PX)	2.42	2.81	3.13	3.47	3.86	4.22	4.61	5.03
		(19.09)	(16.04)	(11.38)	(10.77)	(11.26)	(9.30)	(9.25)	(9.15)
IMPORT DEFLATOR	(PM)	2.27	2.62	2.93	3.21	3.58	3.94	4.26	4.57
		(14.86)	(15.47)	(11.96)	(9.55)	(11.39)	(10.05)	(8.17)	(7.31)
TERMS OF TRADE (PX/PM)		1.07	1.07	1.07	1.08	1.08	1.07	1.08	1.10
		(3.66)	(0.48)	(-0.49)	(1.07)	(-0.09)	(-0.70)	(1.02)	(1.68)
TERMS OF TRADE -GOODS-		1.05	1.05	1.04	1.05	1.04	1.05	1.07	1.09
		(4.37)	(-0.43)	(-0.65)	(0.88)	(-0.50)	(0.30)	(1.86)	(2.49)
TERMS OF TRADE -SERVICES-		1.10	1.11	1.11	1.15	1.18	1.13	1.12	1.12
		(0.0)	(0.90)	(0.42)	(3.46)	(2.95)	(-4.21)	(-1.33)	(0.29)
ANN. WAGE, PRIVATE SECTOR EMPLOYEES ($000'S)	(WPAA)	12.351	13.358	14.981	16.832	18.803	21.019	23.389	25.707
		(7.30)	(8.15)	(12.15)	(12.36)	(11.71)	(11.79)	(11.28)	(9.91)

APPENDIX I-B (CONT'D)

EMPLOYMENT AND UTILIZATION RATES

THOUSANDS OF PERSONS

LABOUR FORCE	(LF)	11204.	11523.	11835.	12143.	12451.	12755.	13050.	13337.
		(2.97)	(2.84)	(2.71)	(2.60)	(2.54)	(2.45)	(2.31)	(2.19)
EMPLOYED	(LE)	10368.	10655.	11005.	11203.	11486.	11781.	12059.	12335.
		(3.99)	(2.77)	(3.28)	(1.80)	(2.52)	(2.57)	(2.36)	(2.29)
		PER CENT							
PARTICIPATION RATE	(RP)	63.22	64.00	64.75	65.52	66.36	67.19	67.91	68.58
UNEMPLOYMENT RATE	(RU)	7.47	7.53	7.02	7.74	7.75	7.64	7.60	7.51
NATURAL UNEMPLOY'T RATE	(RUNAT)	5.78	5.38	5.28	5.20	5.11	5.03	4.96	4.90
CAPACITY UTILIZATION RATE	(RHO)	84.90	79.27	76.94	77.75	76.91	76.78	79.47	82.08

MONETARY AND FISCAL

MILLIONS OF CURRENT CANADIAN DOLLARS

MONEY SUPPLY (BROAD)	(MONM2)	114120.	134635.	148671.	164414.	181865.	205947.	234975.	265551.
		(19.41)	(17.98)	(10.43)	(10.59)	(10.61)	(13.24)	(14.09)	(13.01)
MONEY SUPPLY (NARROW)	(MONM1)	23283.	24392.	25730.	27227.	28911.	31349.	34252.	36799.
		(6.70)	(4.76)	(5.49)	(5.82)	(6.19)	(8.43)	(9.26)	(7.44)
GOV'T SURPLUS (OVERALL)	(GBAL)	-4540.	-5621.	-5623.	-5032.	-444.	-2110.	-2706.	-1847.
		PER CENT							
BANK OF CANADA RATE	(RMBC)	12.19	12.89	14.54	14.28	13.65	12.23	11.24	11.10
YIELD ON 90-DAY FINANCE COMPANY PAPER	(RMF)	12.16	12.77	12.52	14.11	14.33	12.99	11.89	11.35
YIELD ON 1-3 YR GOV'T OF CANADA BONDS	(RMBG1	10.83	11.84	12.70	13.35	13.83	13.09	12.05	11.65
YIELD ON 10-YEAR & OVER GOV'T CANADA BONDS	(RMBG10)	10.33	12.37	12.74	13.52	14.06	13.55	12.91	12.30
REAL RATE ON FINANCE CO. PAPER		2.41	6.00	2.68	4.33	4.53	2.62	2.91	3.25
REAL RATE ON 1-5 YR GOV'T OF CANADA BONDS		1.36	5.23	2.86	3.49	3.98	2.53	2.90	3.65
REAL RETURN (AFTER TAX) ON NEW INVESTMENT		9.16	8.82	7.64	8.10	7.55	7.09	7.57	8.05
PERSONAL SAVING RATE	(RSP)	10.45	10.68	10.60	10.70	10.86	10.87	10.89	10.91
		RATIO							
VELOCITY OF MONEY (BROADLY-DEFINED)	(VELM2)	2.28	2.14	2.19	2.25	2.34	2.34	2.31	2.30
VELOCITY OF MONEY (NARROWLY-DEFINED)	(VELM1)	11.19	11.82	12.64	13.60	14.70	15.34	15.83	16.56

NOTE - PERCENTAGE CHANGES ARE WRITTEN IN PARENTHESES

APPENDIX I-C

SUMMARY OF THE CANADIAN ECONOMIC OUTLOOK

INSTITUTE FOR POLICY ANALYSIS, UNIVERSITY OF TORONTO
FOCUS80F MANPOWER COMMISSION HIGH GROWTH SCENARIO; JULY 1981

NOMINAL GNP COMPONENTS		1979 ACTUAL	1980 SOLUTION	1981 SOLUTION	1982 SOLUTION	1983 SOLUTION	1984 SOLUTION	1985 SOLUTION	1986 SOLUTION
	MILLIONS OF CANADIAN DOLLARS								
PRIVATE CONSUMPTION	(CV)	150489.	166244.	190285.	214215.	241347.	271045.	301811.	336145.
		(11.18)	(10.47)	(14.46)	(12.58)	(12.67)	(12.30)	(11.35)	(11.38)
PUBLIC CONSUMPTION	(GCV)	51215.	57239.	64578.	73333.	82254.	92056.	103505.	116815.
		(7.84)	(11.76)	(12.82)	(13.56)	(12.16)	(11.92)	(12.44)	(12.86)
PRIVATE INVESTMENT	(IFBV)	51991.	59684.	68078.	78722.	91782.	105183.	124574.	147249.
		(15.35)	(14.80)	(14.06)	(15.63)	(16.59)	(14.60)	(18.44)	(18.20)
PUBLIC INVESTMENT	(GIV)	7799.	8414.	9012.	10044.	11565.	13348.	15566.	18219.
		(8.35)	(7.89)	(7.11)	(11.44)	(15.15)	(15.41)	(16.62)	(17.05)
INVENTORY CHANGE	(IIBV)	4384.	-455.	2473.	3543.	5790.	5636.	3804.	3468.
EXPORTS	(XV)	76624.	89769.	106037.	125345.	144878.	162392.	186726.	213664.
		(22.10)	(17.16)	(18.12)	(18.21)	(15.58)	(12.09)	(14.98)	(14.43)
IMPORTS	(MV)	82384.	92463.	110556.	127760.	144553.	161786.	185775.	215084.
		(21.44)	(12.23)	(19.57)	(15.56)	(13.14)	(11.92)	(14.83)	(15.78)
GROSS NATIONAL PRODUCT	(GNPV)	260305.	288137.	328986.	376395.	431884.	486559.	548749.	618859.
		(13.32)	(10.69)	(14.18)	(14.41)	(14.74)	(12.66)	(12.78)	(12.78)
REAL GNP COMPONENTS									
	MILLIONS OF 1971 CANADIAN DOLLARS								
PRIVATE CONSUMPTION	(C)	81140.	81603.	84201.	86640.	88899.	91599.	94161.	96943.
		(1.90)	(0.57)	(3.18)	(2.90)	(2.61)	(3.04)	(2.80)	(2.95)
PUBLIC CONSUMPTION	(GC)	22404.	22545.	22698.	23187.	23614.	23911.	24442.	25102.
		(-1.00)	(0.63)	(0.68)	(2.16)	(1.84)	(1.26)	(2.22)	(2.70)
PRIVATE INVESTMENT	(IFB)	24740.	25863.	27056.	28544.	29735.	30697.	32668.	34627.
		(5.12)	(4.54)	(4.61)	(5.50)	(4.17)	(3.24)	(6.42)	(6.00)
PUBLIC INVESTMENT	(GI)	3774.	3798.	3787.	3877.	4007.	4163.	4325.	4492.
		(-0.89)	(0.64)	(-0.30)	(2.38)	(3.36)	(3.89)	(3.89)	(3.88)
INVENTORY CHANGE	(IIB)	1958.	-759.	254.	744.	1445.	1338.	757.	598.
EXPORTS	(X)	31622.	31937.	33715.	36148.	37857.	39082.	41224.	43358.
		(2.61)	(1.00)	(5.57)	(7.21)	(4.73)	(3.23)	(5.48)	(5.18)
IMPORTS	(M)	36319.	35298.	37943.	40290.	41257.	41902.	44370.	47756.
		(5.89)	(-2.81)	(7.49)	(6.19)	(2.40)	(1.56)	(5.89)	(7.63)
GROSS NATIONAL PRODUCT	(GNP)	129439.	129558.	133400.	138481.	143932.	148519.	152838.	156995.
		(2.73)	(0.09)	(2.97)	(3.81)	(3.94)	(3.19)	(2.91)	(2.72)

APPENDIX I-C (CONT'D)

BALANCE OF PAYMENTS

MILLIONS OF CURRENT CANADIAN DOLLARS

EXPORTS OF GOODS	(XGV)	65170.	76534.	90881.	107854.	124951.	139559.	160693.	183879.
		(23.54)	(17.44)	(18.75)	(18.68)	(15.85)	(11.69)	(15.14)	(14.43)
IMPORTS OF GOODS	(MGV)	61198.	68510.	82799.	96052.	110088.	123671.	143905.	168829.
		(24.51)	(11.95)	(20.86)	(16.01)	(14.61)	(12.34)	(16.36)	(17.32)
BALANCE OF TRADE	(BPT)	3972.	8024.	8082.	11802.	14863.	15888.	16788.	15049.
CURRENT ACCOUNT BALANCE	(BPC)	-5098.	-1377.	-3311.	-1145.	1621.	1872.	2235.	-33.
NET LONG-TERM CAPITAL	(BPLN)	2838.	2356.	4657.	5128.	6764.	11279.	12612.	13057.
NET SHORT-TERM CAPITAL	(BPSN)	3949.	-952.	-1346.	-3984.	-8385.	-13150.	-14847.	-13024.
CHANGE IN RESERVES	(BPRES)	1908.	244.	0.	0.	0.	0.	0.	0.
EXCHANGE RATE ($C/$US)	(RXUS)	1.17	1.17	1.18	1.16	1.14	1.13	1.13	1.12
		(2.70)	(-0.14)	(1.30)	(-2.31)	(-1.25)	(-1.04)	(-0.30)	(-0.71)

PRICE INDEXES

1971 = 1.00

GNP DEFLATOR	(PGNP)	2.01	2.22	2.45	2.71	2.99	3.27	3.58	3.93
		(10.33)	(10.62)	(10.13)	(10.44)	(10.59)	(9.23)	(9.60)	(9.79)
PRIVATE CONSUMPTION DEFL	(PC)	1.85	2.04	2.26	2.47	2.71	2.96	3.21	3.47
		(9.12)	(9.83)	(10.94)	(9.39)	(9.82)	(9.00)	(8.32)	(8.18)
CONSUMER PRICE INDEX	(CPI)	1.91	2.10	2.34	2.59	2.86	3.13	3.42	3.72
		(9.13)	(10.10)	(11.38)	(10.27)	(10.55)	(9.64)	(9.05)	(8.90)
EXPORT DEFLATOR	(PX)	2.42	2.81	3.15	3.47	3.83	4.16	4.53	4.93
		(19.09)	(16.04)	(11.89)	(10.25)	(10.36)	(8.57)	(9.02)	(8.79)
IMPORT DEFLATOR	(PM)	2.27	2.62	2.91	3.17	3.50	3.86	4.19	4.50
		(14.86)	(15.47)	(11.24)	(8.83)	(10.50)	(10.19)	(8.44)	(7.58)
TERMS OF TRADE (PX/PM)		1.07	1.07	1.08	1.09	1.09	1.08	1.08	1.09
		(3.66)	(0.48)	(0.62)	(1.27)	(-0.09)	(-1.49)	(0.56)	(1.09)
TERMS OF TRADE -GOODS-		1.05	1.05	1.04	1.05	1.04	1.05	1.07	1.09
		(4.37)	(-0.43)	(-0.65)	(0.88)	(-0.50)	(0.30)	(1.86)	(2.49)
TERMS OF TRADE -SERVICES-		1.10	1.11	1.12	1.16	1.18	1.13	1.12	1.13
		(0.0)	(0.90)	(0.77)	(4.02)	(2.02)	(-4.35)	(-0.77)	(0.60)
ANN. WAGE, PRIVATE SECTOR EMPLOYEES ($000'S)	(WPAA)	12.351	13.358	15.025	16.891	18.802	20.940	23.303	25.665
		(7.30)	(8.15)	(12.48)	(12.42)	(11.31)	(11.37)	(11.28)	(10.14)

EMPLOYMENT AND UTILIZATION RATES

THOUSANDS OF PERSONS								
LABOUR FORCE (LF)	11204.	11523.	11842.	12154.	12470.	12781.	13085.	13386.
	(2.97)	(2.84)	(2.78)	(2.63)	(2.60)	(2.49)	(2.38)	(2.30)
EMPLOYED (LE)	10368.	10655.	11040.	11248.	11539.	11828.	12120.	12411.
	(3.99)	(2.77)	(3.61)	(1.89)	(2.58)	(2.51)	(2.47)	(2.40)
PER CENT								
PARTICIPATION RATE (RP)	63.22	64.00	64.79	65.59	66.47	67.32	68.09	68.83
UNEMPLOYMENT RATE (RU)	7.47	7.53	6.78	7.46	7.47	7.45	7.37	7.28
NATURAL UNEMPLOY'T RATE (RUNAT)	5.78	5.38	5.28	5.20	5.11	5.03	4.96	4.90
CAPACITY UTILIZATION RATE (RHO)	84.90	79.27	77.01	78.37	77.82	77.59	80.04	82.30

MONETARY AND FISCAL

MILLIONS OF CURRENT CANADIAN DOLLARS								
MONEY SUPPLY (BROAD) (MONM2)	114120.	134635.	149111.	165029.	182522.	206529.	235721.	266603.
	(19.41)	(17.98)	(10.75)	(10.67)	(10.60)	(13.15)	(14.13)	(13.10)
MONEY SUPPLY (NARROW) (MONM1)	23283.	24392.	25730.	27227.	28911.	31349.	34252.	36799.
	(6.70)	(4.76)	(5.49)	(5.82)	(6.19)	(8.43)	(9.26)	(7.44)
GOV'T SURPLUS (OVERALL) (GBAL)	-4540.	-5621.	-4619.	-2888.	2743.	1912.	2743.	4706.
PER CENT								
BANK OF CANADA RATE (RMBC)	12.19	12.89	14.54	14.28	13.65	12.23	11.24	11.10
YIELD ON 90-DAY FINANCE COMPANY PAPER (RMF)	12.16	12.77	12.78	14.48	14.69	13.27	12.18	11.70
YIELD ON 1-3 YR GOV'T OF CANADA BONDS (RMBG1	10.83	11.84	12.92	13.77	14.34	13.54	12.43	12.01
YIELD ON 10-YEAR & OVER GOV'T CANADA BONDS (RMBG10)	10.33	12.37	12.85	13.73	14.36	13.95	13.38	12.76
REAL RATE ON FINANCE CO. PAPER	2.41	6.00	2.73	4.87	5.32	3.31	3.05	3.29
REAL RATE ON 1-5 YR GOV'T OF CANADA BONDS	1.36	5.23	2.88	4.07	4.91	3.39	3.15	3.72
REAL RETURN (AFTER TAX) ON NEW INVESTMENT	9.16	8.82	7.57	8.54	8.24	7.66	7.92	8.14
PERSONAL SAVING RATE (RSP)	10.45	10.68	10.94	10.63	10.60	10.51	10.34	10.25
RATIO								
VELOCITY OF MONEY (BROADLY-DEFINED) (VELM2)	2.28	2.14	2.21	2.28	2.37	2.36	2.33	2.32
VELOCITY OF MONEY (NARROWLY-DEFINED) (VELM1)	11.19	11.82	12.80	13.83	14.95	15.54	16.04	16.83

NOTE - PERCENTAGE CHANGES ARE WRITTEN IN PARENTHESES

APPENDIX II

EMPLOYMENT BY MAJOR INDUSTRY, CANADA 1975 TO 1980

Industry	Level of Employment (000's)						Net Change in Employment (000's)				
	1975	1976	1977	1978	1979	1980	1976	1977	1978	1979	1980
Agriculture/Fishing	504	491	484	496	512	511	-13	-7	12	16	-1
Forestry	60	70	69	77	76	70	10	-1	8	-1	-6
Mining Total	139	145	152	158	167	192	6	7	6	9	25
Mineral fuel mines	35	33	37	43	46	52	-2	4	6	3	6
Other mines/quarries	104	112	115	115	121	140	8	3	0	6	19
Manufacturing Total	1,871	1,921	1,888	1,956	2,070	2,105	50	-33	68	114	35
Food/feed/bev./tob.	244	259	261	274	272	269	15	2	13	-2	-3
Textile/clothing	210	200	191	194	223	209	-10	-9	3	29	-14
Wood/furniture	149	177	181	191	200	198	28	4	10	9	-2
Paper/allied industries	247	253	247	267	269	278	6	-6	20	2	9
Primary metal/metal fabr.	279	275	272	277	292	310	-4	-3	5	15	18
Motor vehicles/parts	118	127	140	145	143	126	9	13	5	-2	-17
Machinery/other transp.	164	162	163	154	186	200	-2	1	-9	32	14
Electrical products	129	130	119	120	129	140	1	-11	1	9	11
Chemical/rubber/petro.	166	172	168	177	190	201	6	-4	9	13	11
Non-metallic mineral	57	65	60	68	61	69	8	-5	8	-7	8
Other manufacturing	108	101	86	89	105	103	-7	-15	3	16	-2
Construction	603	635	633	632	640	619	32	-2	-1	8	-21
Transportation/comm. Total	705	714	712	738	780	777	9	-2	26	42	-3
Transportation/storage	500	493	486	513	545	550	-7	-7	27	32	5
Communication	205	220	226	225	235	227	15	6	-1	10	-8
Utilities	107	111	108	119	117	123	4	-3	11	-2	6
Trade	1,637	1,644	1,679	1,738	1,805	1,830	7	35	59	67	25
Finance	474	496	531	546	553	608	22	35	15	7	55
Services	2,520	2,574	2,694	2,808	2,943	3,079	54	120	114	135	136
Public Administration	665	678	699	704	705	740	13	21	5	1	35
Total	9,285	9,479	9,649	9,972	10,369	10,655	194	170	323	397	286

APPENDIX II (Cont'd)

Industry	Annual Rate of Change in Employment (%)					Percentage Distribution of Employment					
	1976	1977	1978	1979	1980	1975	1976	1977	1978	1989	1980
Agriculture/Fishing	-2.6	-1.4	2.5	3.2	-0.2	5.4	5.2	5.0	4.9	4.9	4.8
Forestry	16.6	-1.4	11.6	-1.2	-7.9	0.6	0.7	0.7	0.7	0.7	0.6
Mining Total	4.3	4.8	3.9	5.7	15.0	1.5	1.5	1.6	1.6	1.6	1.8
Mineral fuel mines	-5.7	12.1	16.2	7.0	13.0	0.4	0.3	0.4	0.4	0.4	0.5
Other mines/quarries	7.7	2.7	-	5.2	15.7	1.1	1.2	1.2	1.2	1.2	1.3
Manufacturing Total	2.7	-1.7	3.6	5.8	1.7	20.1	20.2	19.6	19.7	20.0	19.8
Food/feed/bev./tob.	6.1	0.8	5.0	-0.7	-1.1	2.6	2.7	2.7	2.7	2.6	2.5
Textile/clothing	-4.7	-4.5	1.5	14.9	-6.3	2.3	2.1	2.0	1.9	2.1	2.0
Wood/furniture	18.8	2.2	5.5	4.7	-1.0	1.6	1.9	1.9	1.9	1.9	1.9
Paper/allied industries	2.4	-2.3	8.0	0.7	3.3	2.6	2.6	2.5	2.7	2.6	2.6
Primary metal/metal fabr.	-1.4	-1.0	1.8	5.4	6.2	3.0	2.9	2.8	2.8	2.8	2.9
Motor vehicles/parts	7.6	10.2	3.5	-1.1	-11.9	1.3	1.3	1.4	1.4	1.5	1.2
Machinery/other transp.	-1.2	0.6	-5.5	20.8	7.5	1.8	1.7	1.7	1.5	1.7	1.9
Electrical products	0.8	-8.5	0.8	7.5	8.5	1.4	1.4	1.2	1.2	1.2	1.3
Chemical/rubber/petro.	3.6	-2.3	5.3	7.3	5.8	1.8	1.8	1.7	1.8	1.8	1.9
Non-metallic mineral	14.0	-7.6	13.3	-10.2	13.1	0.6	0.7	0.6	0.7	0.6	0.6
Other manufacturing	-6.4	-14.8	3.4	17.9	-1.9	1.2	1.1	0.9	0.9	1.0	1.0
Construction	5.3	-0.3	-0.1	1.2	-3.3	6.5	6.7	6.6	6.3	6.2	5.8
Transportation/communications Total	1.2	-0.2	3.6	5.6	-0.4	7.6	7.5	7.4	7.4	7.5	7.3
Transportation/storage	-1.4	-1.4	5.5	6.2	0.9	5.4	5.2	5.0	5.1	5.2	5.2
Communication	7.3	2.7	-0.4	4.4	-3.4	2.2	2.3	2.3	2.3	2.3	2.1
Utilities	3.7	-2.7	10.1	-1.6	5.1	1.1	1.2	1.1	1.2	1.3	1.2
Trade	0.4	2.1	3.5	3.8	1.4	17.6	17.3	17.4	17.4	17.4	17.2
Finance	4.6	7.0	2.8	1.3	9.9	5.1	5.2	5.5	5.5	5.3	5.7
Services	2.1	4.7	4.2	4.8	4.6	27.1	27.1	27.9	28.1	28.3	28.9
Public Administration	1.9	3.0	0.7	0.1	5.0	7.1	7.1	7.2	7.0	6.8	6.9
Total	2.1	1.8	3.3	4.0	2.8	100.0	100.0	100.0	100.0	100.0	100.0

APPENDIX LII

ANNUAL NET CHANGE IN EMPLOYMENT BY INDUSTRY:

CANADA, 1981 TO 1986

(000'S)

INDUSTRY	LOW-GROWTH SCENARIO							MEDIUM-GROWTH SCENARIO							HIGH-GROWTH SCENARIO						
	1981	1982	1983	1984	1985	1986	TOTAL 1981-1986	1981	1982	1983	1984	1985	1986	TOTAL 1981-1986	1981	1982	1983	1984	1985	1986	TOTAL 1981-1986
PRIMARY GOODS																					
Agriculture/Fishing	0	-7	-4	-3	-3	-1	-18	3	-6	-2	-2	-3	0	-10	4	-5	-2	-1	-2	0	-6
Forestry	0	0	0	-1	1	0	0	1	0	0	-1	1	0	1	1	1	0	-1	1	0	2
Mining	7	5	6	4	8	8	38	10	5	6	5	8	7	41	10	8	6	6	8	8	46
SECONDARY GOODS																					
Manufacturing	36	17	27	22	37	46	185	53	23	28	32	38	46	220	64	25	31	30	41	52	243
Construction	9	12	23	23	33	19	119	13	13	24	25	33	19	127	20	10	21	25	33	20	129
Utilities	4	3	3	5	4	4	23	5	2	5	4	4	5	25	5	3	4	4	5	5	26
SERVICES-PRODUCING																					
Transportation/Communications	20	12	18	16	17	19	102	25	14	19	17	19	19	113	28	16	19	18	20	20	121
Trade	82	54	69	78	79	100	462	90	60	75	88	83	103	499	100	55	72	86	85	107	505
Finance	36	24	34	33	29	25	181	37	25	33	35	30	25	185	37	28	35	35	30	27	192
Services	101	42	82	70	51	35	381	102	48	81	79	54	37	401	106	55	86	77	58	42	424
Public Administration	11	14	15	12	12	13	77	11	14	15	12	12	13	77	11	14	15	12	12	13	77
TOTAL	307	175	272	262	266	269	1551	349	199	282	296	278	276	1680	384	209	290	290	292	291	1756

APPENDIX IV

ANNUAL RATE OF CHANGE IN EMPLOYMENT BY INDUSTRY:

CANADA, 1981 TO 1986

INDUSTRY	LOW-GROWTH SCENARIO							MEDIUM-GROWTH SCENARIO							HIGH-GROWTH SCENARIO						
	1981	1982	1983	1984	1985	1986	ANN AVG 1981 1986	1981	1982	1983	1984	1985	1986	ANN AVG 1981 1986	1981	1982	1983	1984	1985	1986	ANN AVG 1981 1986
PRIMARY GOODS																					
Agriculture/Fishing	0.0	-1.4	-0.8	-0.6	-0.6	-0.2	-0.6	0.6	-1.2	-0.4	-0.4	-0.6	0.0	-0.3	0.8	-1.0	-0.4	-0.2	-0.4	0.0	-0.2
Forestry	0.0	0.0	0.0	-1.4	1.4	0.0	0.0	1.4	0.0	0.0	-1.4	1.4	0.0	0.2	1.4	1.4	0.0	-1.4	1.4	0.0	0.5
Mining	3.6	2.5	2.9	1.9	3.7	3.6	3.1	5.2	2.5	2.9	2.3	3.7	3.1	3.3	5.2	4.0	2.9	2.8	3.6	3.5	3.6
SECONDARY GOODS																					
Manufacturing	1.7	0.8	1.3	1.0	1.7	2.1	1.4	2.5	1.1	1.3	1.4	1.7	2.0	1.7	3.0	1.2	1.4	1.3	1.8	2.3	1.8
Construction	1.5	1.9	3.6	3.5	4.8	2.6	3.0	2.1	2.1	3.7	3.7	4.8	2.6	3.2	3.2	1.6	3.2	3.7	4.7	2.7	3.2
Utilities	3.3	2.4	2.3	3.8	2.9	2.8	2.9	4.1	1.6	3.8	3.0	2.9	3.5	3.1	4.1	2.3	3.1	3.0	3.6	3.5	3.2
SERVICES-PRODUCING																					
Transportation/Communications	2.6	1.5	2.2	1.9	2.0	2.2	2.1	3.2	1.7	2.3	2.0	2.2	2.2	2.3	3.6	2.0	2.3	2.1	2.3	2.3	2.4
Trade	4.5	2.8	3.5	3.8	3.7	4.6	3.8	4.9	3.1	3.8	4.3	3.9	4.6	4.1	5.5	2.8	3.6	4.2	4.0	4.8	4.1
Finance	5.9	3.7	5.1	4.7	3.9	3.3	4.4	6.1	3.9	4.9	5.0	4.1	3.3	4.5	6.1	4.3	5.2	4.9	4.0	3.5	4.7
Services	3.3	1.3	2.5	2.1	1.5	1.0	2.0	3.3	1.5	2.5	2.4	1.6	1.1	2.1	3.4	1.7	2.7	2.3	1.7	1.2	2.2
Public Administration	1.5	1.9	2.0	1.5	1.5	1.6	1.7	1.5	1.9	2.0	1.5	1.5	1.6	1.7	1.5	1.9	2.0	1.5	1.5	1.6	1.7
TOTAL	2.9	1.6	2.4	2.3	2.3	2.3	2.3	3.3	1.8	2.5	2.6	2.4	2.3	2.5	3.6	1.9	2.6	2.5	2.5	2.4	2.6

APPENDIX V

PERCENTAGE DISTRIBUTION OF TOTAL EMPLOYMENT BY INDUSTRY

CANADA, 1981 TO 1986

INDUSTRY	ACTUAL 1980	LOW-GROWTH SCENARIO						MEDIUM-GROWTH SCENARIO						HIGH-GROWTH SCENARIO					
		1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986
PRIMARY GOODS																			
Agriculture/Fishing	4.8	4.7	4.5	4.4	4.3	4.1	4.0	4.7	4.5	4.4	4.3	4.2	4.1	4.7	4.5	4.4	4.3	4.2	4.1
Forestry	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Mining	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9
SECONDARY GOODS																			
Manufacturing	19.7	19.5	19.4	19.1	18.9	18.8	18.8	19.6	19.5	19.2	19.0	18.9	18.8	19.6	19.5	19.3	19.1	18.9	18.9
Construction	5.8	5.7	5.7	5.8	5.9	6.0	6.0	5.7	5.8	5.8	5.9	6.0	6.0	5.8	5.8	5.8	5.9	6.0	6.0
Utilities	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
SERVICES-PRODUCING																			
Transportation/Communications	7.3	7.3	7.3	7.2	7.2	7.2	7.2	7.3	7.3	7.3	7.2	7.2	7.2	7.3	7.3	7.3	7.3	7.2	7.2
Trade	17.2	17.5	17.7	17.8	18.1	18.4	18.8	17.5	17.7	17.9	18.2	18.5	18.9	17.5	17.7	17.8	18.1	18.4	18.8
Finance	5.7	5.9	6.0	6.2	6.3	6.4	6.5	5.9	6.0	6.1	6.3	6.4	6.4	5.9	6.0	6.1	6.3	6.4	6.5
Services	28.9	29.0	28.9	29.0	28.9	28.7	28.3	28.9	28.8	28.8	28.8	28.6	28.2	28.9	28.8	28.8	28.8	28.6	28.2
Public Administration	6.9	6.9	6.9	6.8	6.8	6.7	6.7	6.8	6.8	6.8	6.7	6.7	6.6	6.8	6.8	6.8	6.7	6.6	6.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

APPENDIX VI

ONTARIO'S SHARE OF CANADA EMPLOYMENT BY INDUSTRY, 1975 TO 1986

(PER CENT)

Industry	Historical						Projections					
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Agriculture/Fishing	23.2	23.0	26.2	26.4	28.5	28.2	27.6	27.8	27.7	27.6	27.5	27.5
Forestry	11.7	14.3	17.4	15.6	14.5	12.9	14.5	15.1	14.1	14.1	14.1	14.1
Mining												
Mineral fuel mines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other mines/quarries	41.3	42.0	38.3	34.8	28.1	35.7	35.3	35.3	35.3	35.3	35.3	35.3
Manufacturing												
Food/feed/bev./tob.	38.5	36.3	37.5	35.0	36.4	34.9	33.9	34.6	35.1	35.1	35.1	35.1
Textile/clothing	29.5	28.0	28.3	32.0	35.9	32.1	31.5	31.5	33.2	33.2	33.2	33.1
Wood/furniture	25.5	25.4	26.0	28.3	27.5	28.3	27.3	27.3	27.3	27.3	27.3	27.3
Paper/allied industries	38.9	40.3	42.5	42.7	40.9	41.0	41.8	41.5	40.8	40.4	40.1	40.1
Primary metal/metal fabr.	54.5	54.9	56.3	57.4	55.8	55.8	55.9	56.0	56.1	56.2	56.3	56.4
Motor vehicles/parts	80.5	81.1	83.6	82.1	84.6	81.0	81.1	81.1	81.1	81.1	81.1	81.1
Machinery/other transp.	49.4	50.0	51.5	49.4	54.3	55.0	53.6	53.6	53.6	53.6	53.6	53.6
Electrical products	65.1	66.9	62.2	65.0	64.3	65.7	65.0	65.0	65.0	65.0	65.0	65.0
Chemical/rubber/petro.	54.2	55.2	55.4	55.9	55.8	56.2	55.9	55.9	55.9	55.9	55.9	55.9
Non-metallic mineral	43.9	50.8	46.7	50.0	42.6	46.3	46.3	46.3	46.3	46.3	46.3	46.3
Other manufacturing	55.6	62.4	62.8	58.4	63.8	58.3	60.2	60.2	60.2	60.2	60.2	60.2
Construction	37.1	36.2	35.7	35.8	35.5	36.0	35.4	34.3	33.8	33.4	33.2	33.1
Transportation/Communication												
Transportation/storage	28.8	30.4	30.7	30.4	30.3	30.5	30.6	30.6	30.7	30.8	30.9	31.0
Communication	31.2	34.5	35.0	35.6	34.0	37.9	35.6	35.6	35.6	35.6	35.6	35.6
Utilities	43.0	39.6	41.7	42.0	41.9	42.3	41.4	41.3	40.6	40.4	40.3	40.2
Trade	37.8	37.1	36.8	37.6	37.9	36.4	36.3	36.7	37.0	37.2	37.2	37.3
Finance	44.1	43.8	41.8	42.7	42.9	41.4	40.9	41.4	40.6	40.1	40.0	40.0
Services	38.4	37.8	38.0	37.7	37.8	37.0	37.4	37.5	37.7	37.9	38.0	38.1
Public Administration	38.9	38.9	37.3	37.4	35.7	35.8	35.6	35.4	35.4	35.2	35.2	35.2

APPENDIX VII

EMPLOYMENT BY MAJOR INDUSTRY, ONTARIO 1975 TO 1980

Industry	Level of Employment (000's)						Net Change in Employment (000's)				
	1975	1976	1977	1978	1979	1980	1976	1977	1978	1979	1980
Agriculture/Fishing	117	113	127	131	146	144	-4	14	4	15	-2
Forestry	7	10	12	12	11	9	3	2	0	-1	-2
Mining Total	43	47	44	40	34	50	4	-3	-4	-6	16
Mineral fuel mines	-	-	-	-	-	-	-	-	-	-	-
Other mines/quarries	43	47	44	40	34	50	4	-3	-4	-6	16
Manufacturing Total	877	910	907	943	1,011	1,013	33	-3	36	68	2
Food/feed/bev./tob.	94	94	98	96	99	94	0	4	-2	3	-5
Textile/clothing	62	56	54	62	80	67	-6	-2	8	18	-13
Wood/furniture	38	45	47	54	55	56	7	2	7	1	1
Paper/allied industries	96	102	105	114	110	114	6	3	9	-4	4
Primary metal/metal fabr.	152	151	153	159	163	173	-1	2	6	4	10
Motor vehicles/parts	95	103	117	119	121	102	8	14	2	2	-19
Machinery/other transp.	81	81	84	76	101	110	0	3	-8	25	9
Electrical products	84	87	74	78	83	92	3	-13	4	5	9
Chemical/rubber/petro.	90	95	93	99	106	113	5	-2	6	7	7
Non-metallic mineral	25	33	28	34	26	32	8	-5	6	-8	6
Other manufacturing	60	63	54	52	67	60	3	-9	-2	15	-7
Construction	224	230	226	226	227	223	6	-4	0	1	-4
Transportation/Comm. Total	208	227	228	236	245	254	19	1	8	9	9
Transportation/storage	144	150	149	156	165	168	6	-1	7	9	3
Communication	64	76	79	80	80	86	12	3	1	0	6
Utilities	46	44	45	50	49	52	-2	1	5	-1	3
Trade	618	610	618	654	684	666	-8	8	36	30	-18
Finance	209	217	222	233	237	252	8	5	11	4	15
Services	967	973	1,025	1,058	1,113	1,138	6	52	33	55	25
Public Administration	259	264	261	263	252	265	5	-3	2	-11	13
Total	3,576	3,645	3,717	3,847	4,008	4,066	69	72	130	161	58

Industry	Annual Rate of Change in Employment (%)					Percentage Distribution of Employment					
	1976	1977	1978	1979	1980	1975	1976	1977	1978	1979	1980
Agriculture/Fishing	-3.4	12.4	3.2	11.5	-1.4	3.3	3.1	3.4	3.4	3.6	3.6
Forestry	42.9	20.0	0.0	-8.3	-22.2	0.2	0.3	0.3	0.3	0.3	0.2
Mining Total	9.3	-6.4	-9.1	-15.0	47.1	1.2	1.3	1.2	1.0	0.8	1.2
Mineral fuel mines	-	-	-	-	-	-	-	-	-	-	-
Other mines/quarries	9.3	-6.4	-9.1	-15.0	47.1	1.2	1.3	1.2	1.0	0.8	1.2
Manufacturing Total	3.8	-0.3	4.0	7.2	0.2	24.5	25.0	24.4	24.5	25.2	24.9
Food/feed/bev./tob.	0.0	4.3	-2.0	3.1	-5.1	2.6	2.6	2.6	2.5	2.5	2.3
Textile/clothing	-9.7	-3.6	14.8	29.0	-16.3	1.7	1.5	1.5	1.6	2.0	1.7
Wood/furniture	18.4	4.4	14.9	1.9	1.8	1.1	1.2	1.3	1.4	1.4	1.4
Paper/allied industries	6.3	2.9	8.6	-3.5	3.6	2.7	2.8	2.8	3.0	2.7	2.8
Primary metal/metal fabr.	-0.7	1.3	3.9	2.5	6.1	4.3	4.1	4.1	4.1	4.1	4.3
Motor vehicles/parts	8.4	13.6	1.7	1.7	-15.7	2.7	2.8	3.1	3.1	3.2	2.5
Machinery/other transp.	0.0	3.7	-9.5	32.9	8.9	2.3	2.2	2.3	2.0	2.3	2.7
Electrical products	3.6	-14.9	5.4	6.4	10.8	2.3	2.4	2.0	2.0	2.1	2.3
Chemical/rubber/petro.	5.6	-2.1	6.5	7.1	6.6	2.5	2.6	2.5	2.6	2.6	2.8
Non-metallic mineral	32.0	-15.2	21.4	-23.5	23.1	0.7	0.9	0.8	0.9	0.6	0.8
Other manufacturing	5.0	-14.3	-3.7	28.8	-10.4	1.7	1.7	1.5	1.4	1.7	1.5
Construction	2.7	-1.7	0.0	0.4	-1.8	6.3	6.3	6.1	5.9	5.7	5.5
Transportation/Comm. Total	9.1	0.4	3.5	3.8	3.7	5.8	6.2	6.1	6.1	6.1	6.2
Transportation/storage	4.2	-0.7	4.7	5.8	1.8	4.0	4.1	4.0	4.1	4.1	4.1
Communication	18.8	3.9	1.3	0.0	7.5	1.8	2.1	2.1	2.1	2.0	2.1
Utilities	-4.4	2.3	11.1	-2.0	6.1	1.3	1.2	1.2	1.3	1.2	1.3
Trade	-1.3	1.3	5.8	4.6	-2.6	17.3	16.7	16.6	17.0	17.1	16.4
Finance	3.8	2.3	5.0	1.7	6.3	5.9	6.0	6.0	6.1	5.9	6.2
Services	0.6	5.3	3.2	5.2	2.2	27.0	26.7	27.6	27.5	27.8	28.0
Public Administration	1.9	-1.1	0.8	-4.2	5.2	7.2	7.2	7.0	6.8	6.3	6.5
Total	1.9	1.9	3.6	4.2	1.4	100.0	100.0	100.0	100.0	100.0	100.0

APPENDIX VIII

ANNUAL NET CHANGE IN EMPLOYMENT BY INDUSTRY:

ONTARIO, 1981 TO 1986

(000'S)

INDUSTRY	LOW-GROWTH SCENARIO							MEDIUM-GROWTH SCENARIO							HIGH-GROWTH SCENARIO						
	1981	1982	1983	1984	1985	1986	TOTAL 1981-1986	1981	1982	1983	1984	1985	1986	TOTAL 1981-1986	1981	1982	1983	1984	1985	1986	TOTAL 1981-1986
PRIMARY GOODS																					
Agriculture/Fishing	-3	-1	-1	-2	-1	0	-8	-2	-1	-1	-1	-1	0	-6	-2	0	-1	-1	-1	0	-5
Forestry	1	1	-1	0	0	0	1	1	1	-1	0	0	0	1	1	1	-1	0	0	0	1
Mining	1	1	2	1	2	2	9	2	1	2	1	2	2	10	2	2	2	1	2	2	11
SECONDARY GOODS																					
Manufacturing	12	13	17	12	17	25	96	23	14	18	12	19	26	112	26	18	19	13	22	23	121
Construction	-1	-2	4	5	10	5	21	1	-3	5	6	9	6	24	3	-3	4	5	10	6	25
Utilities	1	1	0	2	1	2	7	1	1	1	1	2	2	8	1	1	1	1	2	2	8
SERVICES-PRODUCING																					
Transportation/Communications	3	3	7	6	7	6	32	4	5	6	7	7	7	36	4	6	7	6	8	8	39
Trade	27	29	31	33	30	39	189	30	31	34	36	31	41	203	34	29	33	35	32	42	205
Finance	12	13	8	10	11	10	64	12	14	8	10	11	11	66	12	15	9	10	12	10	68
Services	51	19	37	34	22	17	180	52	21	37	37	23	18	188	53	24	39	36	25	20	197
Public Administration	3	3	5	3	4	4	22	3	3	5	3	4	4	22	3	3	5	3	4	4	22
TOTAL	107	79	110	102	104	110	612	124	88	114	115	108	113	662	138	92	117	113	114	118	692

APPENDIX IX

ANNUAL RATE OF CHANGE IN EMPLOYMENT BY INDUSTRY:

ONTARIO, 1981 TO 1986

INDUSTRY	LOW-GROWTH SCENARIO							MEDIUM-GROWTH SCENARIO							HIGH-GROWTH SCENARIO						
	1981	1982	1983	1984	1985	1986	ANN AVG 1981-1986	1981	1982	1983	1984	1985	1986	ANN AVG 1981-1986	1981	1982	1983	1984	1985	1986	ANN AVG 1981-1986
PRIMARY GOODS																					
Agriculture/Fishing	-2.1	-0.7	-0.7	-1.4	-0.7	0.0	-0.9	-1.4	-0.7	-0.7	-0.7	-0.7	0.0	0.7	-1.4	0.0	-0.7	-0.7	-0.7	0.0	-0.6
Forestry	11.1	10.0	-9.1	0.0	0.0	0.0	2.0	11.1	10.0	-9.1	0.0	0.0	0.0	2.0	11.1	10.0	-9.1	0.0	0.0	0.0	2.0
Mining	2.0	2.0	3.8	1.9	3.6	3.5	2.8	4.0	1.9	3.8	1.8	3.6	3.4	3.1	4.0	3.8	3.7	1.8	3.5	3.4	3.4
SECONDARY GOODS																					
Manufacturing	1.2	1.3	1.6	1.1	1.6	2.3	1.5	2.3	1.4	1.7	1.1	1.8	2.4	1.8	2.6	1.7	1.8	1.2	2.0	2.1	1.9
Construction	-0.4	-0.9	1.8	2.2	4.4	2.1	1.5	0.4	-1.3	2.3	2.7	3.9	2.5	1.7	1.3	-1.3	1.8	2.2	4.3	2.5	1.8
Utilities	1.9	1.9	0.0	3.7	1.8	3.5	2.1	1.9	1.9	1.9	1.8	3.6	3.4	2.4	1.9	1.9	1.9	1.8	3.6	3.4	2.4
SERVICES-PRODUCING																					
Transportation/Communications	1.2	1.2	2.7	2.2	2.6	2.1	2.0	1.6	1.9	2.3	2.6	2.5	2.5	2.2	1.6	2.3	2.7	2.2	2.9	2.8	2.4
Trade	4.1	4.2	4.3	4.4	3.8	4.8	4.3	4.5	4.5	4.7	4.7	3.9	5.0	4.5	5.1	4.1	4.5	4.6	4.0	5.1	4.6
Finance	4.8	4.9	2.9	3.5	3.7	3.3	3.8	4.8	5.3	2.9	3.5	3.7	3.6	4.0	4.8	5.7	3.2	3.5	4.0	3.2	4.1
Services	4.5	1.6	3.1	2.7	1.7	1.3	2.5	4.6	1.8	3.1	3.0	1.8	1.4	2.6	4.7	2.0	3.2	2.9	1.9	1.5	2.7
Public Administration	1.1	1.1	1.8	1.1	1.4	1.4	1.3	1.1	1.1	1.8	1.1	1.4	1.4	1.3	1.1	1.1	1.8	1.1	1.4	1.4	1.3
TOTAL	2.6	1.9	2.6	2.3	2.3	2.4	2.4	3.0	2.1	2.7	2.6	2.4	2.4	2.5	3.4	2.2	2.7	2.6	2.5	2.5	2.7

APPENDIX X

PERCENTAGE DISTRIBUTION OF TOTAL EMPLOYMENT BY INDUSTRY

ONTARIO, 1981 TO 1986

INDUSTRY	ACTUAL 1980	LOW-GROWTH SCENARIO						MEDIUM-GROWTH SCENARIO						HIGH-GROWTH SCENARIO					
		1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986
PRIMARY GOODS																			
Agriculture/Fishing	3.5	3.4	3.3	3.2	3.1	3.0	2.9	3.4	3.3	3.2	3.1	3.0	2.9	3.4	3.3	3.2	3.1	3.0	2.9
Forestry	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2
Mining	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.2	1.2	1.3	1.2	1.3	1.3	1.2	1.3	1.3	1.3	1.3	1.3
SECONDARY GOODS																			
Manufacturing	24.9	24.6	24.4	24.2	23.9	23.7	23.7	24.7	24.5	24.3	24.0	23.8	23.8	24.7	24.6	24.4	24.1	23.9	23.8
Construction	5.5	5.3	5.2	5.1	5.1	5.2	5.2	5.3	5.2	5.1	5.1	5.2	5.2	5.4	5.2	5.1	5.1	5.2	5.2
Utilities	1.3	1.3	1.3	1.2	1.3	1.2	1.3	1.3	1.3	1.3	1.2	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.3
SERVICES-PRODUCING																			
Transportation/Communications	6.2	6.1	6.1	6.1	6.1	6.1	6.1	6.2	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.2
Trade	16.4	16.6	17.0	17.3	17.6	17.9	18.3	16.6	17.0	17.3	17.7	17.9	18.4	16.6	17.0	17.3	17.6	17.9	18.3
Finance	6.2	6.3	6.5	6.5	6.6	6.7	6.8	6.3	6.5	6.5	6.6	6.7	6.7	6.3	6.5	6.5	6.6	6.7	6.7
Services	28.0	28.5	28.4	28.5	28.6	28.5	28.2	28.4	28.3	28.4	28.5	28.3	28.0	28.3	28.3	28.4	28.5	28.3	28.1
Public Administration	6.5	6.4	6.4	6.3	6.2	6.2	6.1	6.4	6.3	6.3	6.2	6.1	6.1	6.4	6.3	6.3	6.2	6.1	6.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

APPENDIX XI

PERCENTAGE DISTRIBUTION OF WHITE-COLLAR, BLUE-COLLAR, AND OTHER EMPLOYMENT BY INDUSTRY, ONTARIO, 1971.

	Total	White-Collar Workers	Blue-Collar Workers	Not Elsewhere Classified
Agriculture/fishing	100.0	3.0	96.0	1.0
Forestry	100.0	9.0	88.2	2.8
Mining	-	-	-	-
Mineral Fuel mines	100.0	62.4	28.0	9.5
Other mines/quarries	100.0	19.3	76.9	3.8
Manufacturing	-	-	-	-
Food/feed/bev/toba	100.0	36.1	58.7	5.2
Textile/clothing	100.0	20.0	75.4	4.6
Wood/furniture	100.0	19.8	75.1	5.1
Paper/allied industries	100.0	38.9	57.4	3.6
Primary metal/metal fabr	100.0	23.6	68.6	7.8
Motor vehicles/parts	100.0	20.3	74.3	5.4
Machinery/other transp.	100.0	38.3	57.5	4.2
Electrical products	100.0	36.3	59.4	4.3
Chemical/rubber/petro	100.0	41.6	52.2	6.2
Non-metallic mineral	100.0	24.6	68.3	7.1
Other manufacturing	100.0	35.9	58.1	6.0
Construction	100.0	14.1	82.4	3.5
Transportation/communication	-	-	-	-
Transportation/storage	100.0	23.7	73.2	3.1
Communication	100.0	77.3	21.3	1.4
Utilities	100.0	42.8	51.3	5.8
Trade	100.0	68.4	28.4	3.2
Finance	100.0	90.6	7.7	1.7
Services	100.0	65.3	32.2	2.5
Public Administration	100.0	73.9	21.7	4.4

Note: Figures may not add up to totals because of rounding.

Source: Statistics Canada, 1971 Census of Canada, Special Tabulation.

APPENDIX XII

ANNUAL JOB OPENINGS DUE TO GROWTH AND REPLACEMENT NEEDS BY INDUSTRY AND OCCUPATION GROUP

ONTARIO, 1981 TO 1986

LOW-GROWTH SCENARIO

INDUSTRY/OCCUPATIONS	1981			1982			1983			1984			1985			1986			TOTAL		
	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT
AGRICULTURE/FISHING	-395	-3000	2605	1402	-1000	2402	1602	-1000	2602	672	-2000	2672	1562	-1000	2562	2880	0	2880	7723	-8000	15723
WHITE-COLLAR	-13	-90	77	35	-30	65	48	-30	78	-4	-60	56	34	-30	64	89	0	89	189	-240	429
BLUE-COLLAR	-370	-2880	2510	1358	-960	2318	1550	-960	2510	681	-1920	2601	1514	-960	2474	2754	0	2754	7487	-7680	15167
OTHER	-12	-30	18	9	-10	19	4	-10	14	-5	-20	15	14	-10	24	37	0	37	47	-80	127
FORESTRY	1106	1000	106	1109	1000	109	-877	-1000	123	112	0	112	117	0	117	172	0	172	1739	1000	739
WHITE-COLLAR	93	90	3	93	90	3	-73	-90	17	8	0	8	13	0	13	17	0	17	151	90	61
BLUE-COLLAR	984	882	102	983	882	101	-777	-882	105	103	0	103	103	0	103	149	0	149	1545	882	663
OTHER	29	28	1	33	28	5	-27	-28	1	1	0	1	1	0	1	5	0	5	42	28	14
MINING	1690	1000	690	1735	1000	735	2748	2000	748	1752	1000	752	2876	2000	876	2773	2000	773	13574	9000	4574
WHITE-COLLAR	310	193	117	304	193	111	502	386	116	333	193	140	546	386	160	503	386	117	2498	1737	761
BLUE-COLLAR	1328	769	559	1373	769	604	2150	1538	612	1357	769	588	2217	1538	679	2160	1538	622	10585	6921	3664
OTHER	52	38	14	58	38	20	96	76	20	62	38	24	113	76	37	109	76	33	490	342	148
MANUFACTURING	25350	12000	13351	27233	13000	14230	31195	17000	14195	26806	12000	14806	33717	17000	16717	42697	25000	17697	186996	96000	90996
WHITE-COLLAR	7772	3743	4029	8379	3944	4435	8989	4541	4448	7987	3391	4596	9880	4907	4973	12988	7682	5306	55995	28208	27787
BLUE-COLLAR	16118	7543	8575	17296	8272	9024	20498	11458	9040	17254	7859	9395	21888	11019	10869	27348	15892	11456	120402	62043	58359
OTHER	1455	709	747	1557	783	771	1708	1001	707	1564	749	815	1947	1073	874	2357	1423	934	10586	5738	4848
CONSTRUCTION	1898	-1000	2898	825	-2000	2825	7044	4000	3044	8069	5000	3069	13787	10000	3787	8929	5000	3929	40552	21000	19552
WHITE-COLLAR	300	-141	441	178	-282	460	1046	564	482	1170	705	465	1998	1410	588	1362	705	657	6054	2961	3093
BLUE-COLLAR	1552	-824	2376	611	-1648	2259	5753	3296	2457	6639	4120	2519	11284	8240	3044	7256	4120	3136	33095	17304	15791
OTHER	46	-35	81	36	-70	106	245	140	105	260	175	85	504	350	154	310	175	135	1401	735	666
UTILITIES	1656	1000	658	1695	1000	695	731	0	731	2638	2000	638	1783	1000	783	2882	2000	882	11387	7000	4387
WHITE-COLLAR	686	428	258	709	428	281	256	0	256	1108	856	252	740	428	312	1209	856	353	4708	2996	1712
BLUE-COLLAR	867	513	354	890	513	377	420	0	420	1384	1026	358	934	513	421	1492	1026	466	5987	3591	2396
OTHER	102	58	44	95	58	37	55	0	55	144	116	28	108	58	50	180	116	64	684	406	278
TRANSP./COMM.	6482	3000	3481	6635	3000	3636	10655	7000	3655	9900	6000	3900	11192	7000	4192	10315	6000	4315	55179	32000	23179
WHITE-COLLAR	2005	711	1293	3723	2319	1404	5725	4339	1386	4957	3566	1391	5950	4339	1611	5310	3566	1744	27669	18840	8829
BLUE-COLLAR	4301	2196	2105	611	639	2143	4700	2529	2171	4726	2316	2410	5004	2529	2475	4784	2316	2468	26297	12525	13772
OTHER	176	93	83	36	42	89	230	132	98	217	118	99	238	132	106	221	118	103	1213	635	578
TRADE	35025	27000	8025	37351	29000	8351	39236	31000	8236	41647	33000	8647	39827	30000	9827	49302	39000	10302	242388	189000	53388
WHITE-COLLAR	24509	18468	6041	26127	19836	6291	27403	21204	6199	29034	22572	6462	27934	20520	7414	34384	26676	7708	169391	129276	40115
BLUE-COLLAR	9458	7668	1790	10123	8236	1887	10652	8804	1848	11392	9372	2020	10773	8520	2253	13453	11076	2377	65851	53676	12175
OTHER	1058	864	194	1101	928	173	1181	992	189	1221	1056	165	1120	960	160	1464	1248	216	7145	6048	1097

APPENDIX XII (Cont'd)

LOW-GROWTH SCENARIO

INDUSTRY/OCCUPATION	1981			1982			1983			1984			1985			1986			TOTAL		
	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT
FINANCE	14026	12000	2026	15123	13000	2123	10194	8000	2194	12263	10000	2263	13629	11000	2629	12970	10000	2970	78205	64000	14205
WHITE-COLLAR	12621	10872	1749	13612	11778	1834	9161	7248	1913	11026	9060	1966	12243	9966	2277	11665	9060	2605	70328	57984	12344
BLUE-COLLAR	1169	924	245	1243	1001	242	856	616	240	1003	770	233	1135	847	288	1101	770	331	6507	4928	1579
OTHER	236	204	32	268	221	47	177	136	41	234	170	64	251	187	64	203	170	33	1369	1088	281
SERVICES	63248	51000	12248	31414	19000	12411	49338	37000	12338	47223	34000	13223	36570	22000	14570	32347	17000	15347	260137	180000	80137
WHITE-COLLAR	40690	33303	7387	19939	12407	7532	31526	24161	7365	30335	22202	8133	23269	14366	8903	20596	11101	9495	166355	117540	48815
BLUE-COLLAR	2100	16422	4578	10706	6118	4588	16594	11914	4680	15728	10948	4780	12432	7084	5348	11019	5474	5545	87479	57960	29519
OTHER	1558	1275	283	769	475	294	1218	925	293	1160	850	310	869	550	319	732	425	307	6306	4500	1806
PUBLIC ADMINISTRATION	7678	3000	4678	7973	3000	4973	10048	5000	5048	8218	3000	5218	10057	4000	6057	10110	4000	6110	54084	22000	32084
WHITE-COLLAR	5486	2217	3269	5642	2217	3425	7261	3695	3566	5878	2217	3661	7357	2956	4401	7350	2956	4394	38974	16258	22716
BLUE-COLLAR	1875	651	1224	1943	651	1292	2293	1085	1208	1958	651	1307	2274	868	1406	2326	868	1458	12669	4774	7895
OTHER	317	132	185	388	132	256	494	220	274	382	132	250	426	176	250	434	176	258	2441	968	1473
UNSPECIFIED INDUSTRIES	3178	0	3178	3286	0	3286	3161	0	3161	3427	0	3427	3410	0	3410	3792	0	3792	20254	0	20254
WHITE-COLLAR	154	0	154	154	0	154	171	0	171	168	0	168	137	0	137	196	0	196	980	0	980
BLUE-COLLAR	150	0	150	136	0	136	127	0	127	191	0	191	163	0	163	166	0	166	933	0	933
OTHER	2873	0	2873	2996	0	2996	2863	0	2863	3068	0	3068	3110	0	3110	3430	0	3430	18340	0	18340
TOTAL	160941	107000	53947	134781	79000	55778	166076	110000	56076	160729	102000	58729	169528	104000	65528	179168	110000	69168	971226	612000	359226
WHITE-COLLAR	94617	69798	24821	78235	52240	25997	92620	66624	25996	90759	63460	27299	90677	59824	30853	95673	62991	32682	542542	374894	167648
BLUE-COLLAR	58433	33865	24571	49339	24369	24972	64958	39540	25418	62153	35647	26506	69887	40363	29524	74010	43081	30929	378810	216890	161920
OTHER	7891	3337	4555	7207	2391	4809	8498	3836	4662	7817	2893	4924	8964	3813	5151	9485	3928	5557	49874	20216	29658

APPENDIX XIII

ANNUAL JOB OPENINGS DUE TO GROWTH AND REPLACEMENT NEEDS BY INDUSTRY AND OCCUPATION GROUP

ONTARIO, 1981 TO 1986

MEDIUM-GROWTH SCENARIO

	1981			1982			1983			1984			1985			1986			TOTAL		
INDUSTRY/OCCUPATION	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT
AGRICULTURE/FISHING	605	-2000	2605	1402	-1000	2402	1602	-1000	2602	1672	-1000	2672	1562	-1000	2562	2880	0	2880	9723	-6000	15723
WHITE-COLLAR	17	-60	77	35	-30	65	48	-30	78	26	-30	56	34	-30	64	89	0	89	249	-180	429
BLUE-COLLAR	590	-1920	2510	1358	-960	2318	1550	-960	2510	1641	-960	2601	1514	-960	2474	2754	0	2754	9407	-5760	15167
OTHER	-2	-20	18	9	-10	19	4	-10	14	5	-10	15	14	-10	24	37	0	37	67	-60	127
FORESTRY	1106	1000	106	1109	1000	109	-876	-1000	123	112	0	112	117	0	117	172	0	172	1739	1000	739
WHITE-COLLAR	93	90	3	93	90	3	-73	-90	17	8	0	8	13	0	13	17	0	17	151	90	61
BLUE-COLLAR	984	882	102	983	882	101	-777	-882	105	103	0	103	103	0	103	149	0	149	1545	882	663
OTHER	29	28	1	33	28	5	-27	-28	1	1	0	1	1	0	1	5	0	5	42	28	14
MINING	2690	2000	690	1735	1000	735	2748	2000	748	1752	1000	752	2876	2000	876	2773	2000	773	14574	10000	4574
WHITE-COLLAR	503	386	117	304	193	111	502	386	116	333	193	140	546	386	160	503	386	117	2691	1930	761
BLUE-COLLAR	5097	1538	559	1373	769	604	2150	1538	612	1357	769	588	2217	1538	679	2160	1538	622	11354	7690	3664
OTHER	90	76	14	58	38	20	96	76	20	62	38	24	113	76	37	109	76	33	528	380	148
MANUFACTURING	36350	23000	13351	28233	14000	14230	32195	18000	14195	26806	12000	14806	35717	19000	16717	43697	26000	17697	202996	112000	90996
WHITE-COLLAR	11184	7155	4029	8569	4134	4435	9396	4948	4448	7981	3385	4596	10465	5492	4973	13201	7895	5306	60796	33009	27787
BLUE-COLLAR	23088	14513	8575	18053	9029	9024	21014	11974	9040	17270	7875	9395	23207	12338	10869	28084	16628	11456	130716	72357	58359
OTHER	2072	1326	747	1610	836	771	1785	1078	707	1554	739	815	2042	1168	874	2408	1474	934	11469	6621	4848
CONSTRUCTION	3898	1000	2898	-175	-3000	2825	8044	5000	3044	9069	6000	3069	12787	9000	3787	9929	6000	3929	43552	24000	19552
WHITE-COLLAR	582	141	441	37	-423	460	1187	705	482	1311	846	465	1857	1269	588	1503	846	657	6477	3384	3093
BLUE-COLLAR	3200	824	2376	-213	-2472	2259	6577	4120	2457	7463	4944	2519	10460	7416	3044	8080	4944	3136	35567	19776	15791
OTHER	116	35	81	1	-105	106	280	175	105	295	210	85	469	315	154	345	210	135	1506	840	666
UTILITIES	1656	1000	658	1695	1000	695	1731	1000	731	1638	1000	638	2783	2000	783	2882	2000	882	12387	8000	4387
WHITE-COLLAR	686	428	258	709	428	281	684	428	256	680	428	252	1168	856	312	1209	856	353	5136	3424	1712
BLUE-COLLAR	867	513	354	890	513	377	933	513	420	871	513	358	1447	1026	421	1492	1026	466	6500	4104	2396
OTHER	102	58	44	95	58	37	113	58	55	86	58	28	166	116	50	180	116	64	742	464	278
TRANSP./COMMUNICATION	7482	4000	3481	8635	5000	3636	9655	6000	3655	10900	7000	3900	11192	7000	4192	11315	7000	4315	59179	36000	23179
WHITE-COLLAR	2242	948	1293	4733	3329	1404	4952	3566	1386	5730	4339	1391	5950	4339	1611	5547	3803	1744	29153	20324	8829
BLUE-COLLAR	5033	2928	2105	3726	1584	2143	4487	2316	2171	4939	2529	2410	5004	2529	2475	5516	3048	2468	28706	14934	13772
OTHER	207	124	83	176	87	89	216	118	98	231	132	99	238	132	106	252	149	103	1320	742	578
TRADE	38025	3000	8025	39351	31000	8351	42236	34000	8236	44647	36000	8647	40827	31000	9827	51302	41000	10302	256388	203000	53388
WHITE-COLLAR	26561	20520	6041	27495	21204	6291	29455	23256	6199	31086	24624	6462	28618	21204	7414	35752	28044	7708	178967	138852	40115
BLUE-COLLAR	10310	8520	1790	10691	8804	1887	11504	9656	1848	12244	10224	2020	11057	8804	2253	14021	11644	2377	69827	57652	12175
OTHER	1154	960	194	1165	992	173	1277	1088	189	1317	1152	165	1152	992	160	1528	1312	216	7593	6496	1097

APPENDIX XIII (Cont'd.)

MEDIUM-GROWTH SCENARIO

INDUSTRY/OCCUPATION	1981			1982			1983			1984			1985			1986			TOTAL		
	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT	TOTAL JOB OPEN.	OPEN. DUE TO GROWTH	OPEN. DUE TO RE-PLACE-MENT
FINANCE	14026	12000	2026	16123	14000	2123	10194	8000	2194	12263	10000	2263	13629	11000	2629	13970	11000	2970	80205	66000	14205
WHITE-COLLAR	12621	10872	1749	14518	12684	1834	9161	7248	1913	11026	9060	1966	12243	9966	2277	12571	9966	2605	72140	59796	12344
BLUE-COLLAR	1169	924	245	1320	1078	242	856	616	240	1003	770	233	1135	847	288	1178	847	331	6661	5082	1579
OTHER	236	204	32	285	238	47	177	136	41	234	170	64	251	187	64	220	187	33	1403	1122	281
SERVICES	64248	52000	12248	33414	21000	12411	49338	37000	12338	50223	37000	13223	37570	23000	14570	33347	18000	15347	268137	188000	80137
WHITE-COLLAR	41343	33956	7387	21245	13713	7532	31526	24161	7365	32294	24161	8133	23922	15019	8903	21249	11754	9495	171579	122764	48815
BLUE-COLALR	21322	16744	4578	11359	6762	4588	16594	11914	4680	16694	11914	4780	12754	7406	5348	11341	5796	5545	90055	60536	29519
OTHER	1583	1300	283	819	525	294	1218	925	293	1235	925	310	894	575	319	757	450	307	6506	4700	1806
PUBLIC ADMINISTRATION	7678	3000	4678	7973	3000	4973	10048	5000	5048	8218	3000	5218	10057	4000	6057	10110	4000	6110	54084	22000	32084
WHITE-COLLAR	5486	2217	3269	5642	2217	3425	7261	3695	3566	5878	2217	3661	7357	2956	4401	7350	2956	4394	38974	16258	22716
BLUE-COLLAR	1875	651	1224	1943	651	1292	2293	1085	1208	1958	651	1307	2274	868	1406	2326	868	1458	12669	4774	7895
OTHER	317	132	185	388	132	256	494	220	274	382	132	250	426	176	250	434	176	258	2441	968	1473
UNSPECIFIEC INDUS.	3178	0	3178	3286	0	3286	3161	0	3161	3427	0	3427	3410	0	3410	3792	0	3792	20254	0	20254
WHITE-COLLAR	154	0	154	154	0	154	171	0	171	168	0	168	137	0	137	196	0	196	980	0	980
BLUE-COLLAR	150	0	150	136	0	136	127	0	127	191	0	191	163	0	163	166	0	166	933	0	933
OTHER	2873	0	2873	2996	0	2996	2863	0	2863	3068	0	3068	3110	0	3110	3430	0	3430	18340	0	18340
TOTAL	177941	124000	53947	143781	88000	55778	170076	114000	56076	173729	115000	58729	173528	108000	65528	182168	113000	69168	1021226	662000	359226
WHITE-COLLAR	99665	74846	24821	84197	58202	25997	94270	68274	25996	98377	71078	27299	92887	62034	30853	96917	64235	32682	566213	398565	167648
BLUE-COLLAR	70248	45680	24571	51713	26743	24972	67308	41890	25418	66130	39624	26506	71502	41978	29524	76572	45643	30929	403557	241637	161920
OTHER	8028	3474	4555	7871	3055	4809	8498	3836	4662	9222	4298	4924	9139	3988	5151	8679	3122	5557	51456	21798	29658

APPENDIX XIV

ANNUAL JOB OPENINGS DUE TO GROWTH AND REPLACEMENT NEEDS BY INDUSTRY AND OCCUPATION GROUP

ONTARIO, 1981 TO 1986

HIGH-GROWTH SCENARIO

INDUSTRY/OCCUPATION	1981			1982			1983			1984			1985			1986			TOTAL		
	TOTAL JOB OPENINGS	OPENINGS DUE TO GROWTH	OPENINGS DUE TO REPLACEMENT	TOTAL JOB OPENINGS	OPENINGS DUE TO GROWTH	OPENINGS DUE TO REPLACEMENT	TOTAL JOB OPENINGS	OPENINGS DUE TO GROWTH	OPENINGS DUE TO REPLACEMENT	TOTAL JOB OPENINGS	OPENINGS DUE TO GROWTH	OPENINGS DUE TO REPLACEMENT	TOTAL JOB OPENINGS	OPENINGS DUE TO GROWTH	OPENINGS DUE TO REPLACEMENT	TOTAL JOB OPENINGS	OPENINGS DUE TO GROWTH	OPENINGS DUE TO REPLACEMENT	TOTAL JOB OPENINGS	OPENINGS DUE TO GROWTH	OPENINGS DUE TO REPLACEMENT
AGRICULTURE/FISHING	605	-2000	2605	2402	0	2402	1602	-1000	2602	1672	-1000	2672	1562	-1000	2562	2880	0	2880	10723	-5000	15723
WHITE-COLLAR	17	-60	77	65	0	65	48	-30	78	26	-30	56	34	-30	64	89	0	89	279	-150	429
BLUE-COLLAR	590	-1920	2510	2318	0	2318	1550	-960	2510	1641	-960	2601	1514	-960	2474	2754	0	2754	10367	-4800	15167
OTHER	-2	-20	18	19	0	19	4	-10	14	5	-10	15	14	-10	24	37	0	37	77	-50	127
FORESTRY	1106	1000	106	1109	1000	109	877	-1000	123	112	0	112	117	0	117	172	0	172	1739	1000	739
WHITE-COLLAR	93	90	3	93	90	3	73	-90	17	8	0	8	13	0	13	17	0	17	151	90	61
BLUE-COLLAR	984	882	102	983	882	101	-777	-882	105	103	0	103	103	0	103	149	0	149	1545	882	663
OTHER	29	28	1	33	28	5	27	-28	1	1	0	1	1	0	1	5	0	5	42	28	14
MINING	2690	2000	690	2735	2000	735	2748	2000	748	1752	1000	752	2876	2000	876	2773	2000	773	15574	11000	4574
WHITE-COLLAR	503	386	117	497	386	111	502	386	116	333	193	140	546	386	160	503	386	117	2884	2123	761
BLUE-COLLAR	2097	1538	559	2142	1538	604	2150	1538	612	1357	769	588	2217	1538	679	2160	1538	622	12123	8459	3664
OTHER	90	76	14	96	76	20	96	76	20	62	38	24	113	76	37	109	76	33	566	418	148
MANUFACTURING	39350	26000	13351	32233	18000	14230	33195	19000	14195	27806	13000	14806	38717	22000	16717	40697	23000	17697	211996	121000	90996
BLUE-COLLAR	11986	7957	4029	9742	5307	4435	9812	5364	4448	8395	3799	4596	11390	6417	4973	12098	6792	5306	63423	35636	27787
WHITE-COLLAR	25111	16536	8575	20696	11672	9024	21536	12496	9040	17782	8387	9395	25124	14255	10869	26341	14885	11456	136590	78231	58359
OTHER	2247	1501	747	1793	1019	771	1847	1140	707	1628	813	815	2200	1326	874	2254	1320	934	11967	7119	4848
CONSTRUCTION	5898	3000	2898	-175	-3000	2825	7044	4000	3044	8069	5000	3069	13787	10000	3787	9929	6000	3929	44552	25000	19552
WHITE-COLLAR	864	423	441	37	-423	460	1046	564	482	1170	705	465	1998	1410	588	1503	846	657	6618	3525	3093
BLUE-COLLAR	4848	2472	2376	-213	-2472	2259	5753	3296	2457	6639	4120	2519	11284	8240	3044	8080	4944	3136	36391	20600	15791
OTHER	186	105	81	1	-105	106	245	140	105	260	175	85	504	350	154	345	210	135	1541	875	666
UTILITIES	1656	1000	658	1695	1000	695	1731	1000	731	1638	1000	638	2783	2000	783	2882	2000	882	12387	8000	4387
WHITE-COLLAR	686	428	258	709	428	281	684	428	256	680	428	252	1168	856	312	1209	856	353	5136	3424	1712
BLUE-COLLAR	867	513	354	890	513	377	933	513	420	871	513	358	1447	1026	421	1492	1026	466	6500	4104	2396
OTHER	102	58	44	95	58	37	113	58	55	86	58	28	166	116	50	180	116	64	742	464	278
TRANSP./COMM.	7482	4000	3481	9636	6000	3636	10655	7000	3655	9900	6000	3900	12192	8000	4192	12315	8000	4315	67179	39000	23179
WHITE-COLLAR	2242	948	1293	4970	3566	1404	5725	4339	1386	4957	3566	1391	6187	4576	1611	6320	4576	1744	30400	21571	8829
BLUE-COLLAR	5033	2928	2105	4458	2316	2143	4700	2529	2171	4726	2316	2410	5736	3261	2475	5729	3261	2468	30383	16611	13772
OTHER	207	124	83	207	118	89	224	132	98	217	118	99	269	163	106	266	163	103	1396	818	578
TRADE	42025	34000	8025	37351	29000	8351	41236	33000	8236	43647	35000	8647	41827	32000	9827	52302	42000	10302	258388	205000	53388
WHITE-COLLAR	29297	23256	6041	26127	19836	6291	28771	22572	6199	30402	23940	6462	29302	21888	7414	36436	28728	7708	180335	140220	40115
BLUE-COLLAR	11446	9656	1790	10123	8236	1887	11220	9372	1848	11960	9940	2020	11341	9088	2253	14305	11928	2377	70395	58220	12175
OTHER	1282	1088	194	1101	928	173	1245	1056	189	1285	1120	165	1184	1024	160	1560	1344	216	7657	6560	1097

APPENDIX XIV (Cont'd)

HIGH GROWTH SCENARIO

INDUSTRY/ OCCUPATION	1981			1982			1983			1984			1985			1986			TOTAL		
	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT	TOTAL JOB OPEN-INGS	OPEN-INGS DUE TO GROWTH	OPEN-INGS DUE TO REPLA-CEMENT
FINANCE	14026	12000	2026	17123	15000	2123	11194	9000	2194	12263	10000	2263	14629	12000	2629	12970	10000	2970	82205	68000	14205
WHITE-COLLAR	12621	10872	1749	15424	13590	1834	10067	8154	1913	11026	9060	1966	13149	10872	2277	11665	9060	2605	73952	61608	12344
BLUE-COLLAR	1169	924	245	1397	1155	242	933	693	240	1003	770	233	1212	924	288	1101	770	331	6815	5236	1579
OTHER	236	204	32	302	255	47	194	153	41	234	170	64	268	204	64	203	170	33	1437	1156	281
SERVICES	65248	53000	12248	36414	24000	12411	51338	39000	12338	49223	36000	13223	39570	25000	14570	35347	20000	15347	277137	197000	80137
WHITE-COLLAR	41996	34609	7387	23204	15672	7532	32832	25467	7365	31641	23508	8133	25228	16325	8903	22555	13060	9495	177456	128641	48815
BLUE-COLLAR	21644	17066	4578	12316	7728	4588	17238	12558	4680	16372	11592	4780	13398	8050	5348	11985	6440	5545	92953	63434	29519
OTHER	1608	1325	283	894	600	294	1268	975	293	1210	900	310	944	625	319	807	500	307	6731	4925	1806
PUBLIC ADMINISTRATION	7678	3000	4678	7973	3000	4973	10048	5000	5048	8218	3000	5218	10057	4000	6057	10110	4000	6110	54084	22000	32084
WHITE-COLLAR	5486	2217	3269	5642	2217	3425	7261	3695	3566	5878	2217	3661	7357	2956	4401	7350	2956	4394	38974	16258	22716
BLUE-COLLAR	1875	651	1224	1943	651	1292	2293	1085	1208	1958	651	1307	2274	868	1406	2326	868	1458	12669	4774	7895
OTHER	317	132	185	388	132	256	494	220	274	382	132	250	426	176	250	434	176	258	2441	968	1473
UNSPECIFIED INDUSTRIES	3178	0	3178	3286	0	3286	3161	0	3161	3427	0	3427	3410	0	3410	3792	0	3792	20254	0	20254
WHITE-COLLAR	154	0	154	154	0	154	171	0	171	168	0	168	137	0	137	196	0	196	980	0	980
BLUE-COLLAR	150	0	150	136	0	136	127	0	127	191	0	191	163	0	163	166	0	166	933	0	933
OTHER	2873	0	2873	2996	0	2996	2863	0	2863	3068	0	3068	3110	0	3110	3430	0	3430	18340	0	18340
TOTAL	191941	138000	53947	147781	92000	55778	173076	117000	56076	171729	113000	58729	179528	114000	65528	187168	118000	69168	1051226	692000	359226
WHITE-COLLAR	106541	81722	24821	84138	58143	25997	96846	70850	25996	97159	69860	27299	95379	64526	30853	100520	67838	32682	580708	413060	167648
BLUE-COLLAR	75967	51399	24571	56682	31712	24972	67656	42238	25418	65126	38620	26506	75465	45941	29524	76755	45826	30929	417578	255658	161920
OTHER	9433	4879	4555	6961	2145	4809	8574	3912	4662	9444	4520	4924	8684	3533	5151	9893	4336	5557	52940	23282	29658

APPENDIX XV

PERCENTAGE DISTRIBUTION OF WHITE-COLLAR AND BLUE-COLLAR OCCUPATIONS BY LEVEL OF EDUCATION/TRAINING: ONTARIO, 1971

	Percent
All White-Collar Occupations	100.0
Filled by University Graduates	7.8
Filled by University or College Graduates or Certified Professionals	25.3
Filled by College Graduates	13.3
Normally not Requiring College or University Graduation	53.6
All Blue-Collar Occupations	100.0
Highly Skilled Occupations	26.1
Medium Skilled Occupations	13.4
Low Skilled Occupations	60.5

Source: Derived from Statistics Canada, 1971 Census of Canada, Cat. No. 94-731.

APPENDIX XVI

GROWTH RATES OF THE WORKING-AGE POPULATION BY SEX AND AGE

ONTARIO, ANNUAL AVERAGES, 1976 TO 1986

(PERCENT)

SEX AND AGE	Historical					Projected					
	1975 to 1976	1976 to 1977	1977 to 1978	1978 to 1979	1979 to 1980	1980 to 1981	1981 to 1982	1982 to 1983	1983 to 1984	1984 to 1985	1985 to 1986
Men											
15-19 Yrs	2.8	1.7	1.5	0.2	-0.7	-2.6	-3.2	-4.6	-4.3	-3.3	-1.7
20-24 Yrs	2.3	3.0	3.0	2.3	2.3	2.7	1.5	1.4	0.2	-0.9	-2.6
25-34 Yrs	3.1	2.5	2.1	1.8	1.9	2.9	1.1	1.8	2.2	2.4	2.6
35-44 Yrs	0.4	1.3	1.9	2.0	1.9	2.5	4.9	4.0	3.3	3.0	2.8
45-54 Yrs	0.9	0.2	0.2	-0.2	-0.2	-0.4	-0.2	-0.2	0.0	-0.2	0.2
55-64 Yrs	2.8	3.0	2.6	2.0	2.2	2.5	2.1	2.6	2.0	1.0	0.7
65+ Yrs	2.8	3.1	3.3	3.2	2.8	1.8	1.8	1.5	1.7	2.8	2.7
Total	2.1	2.1	1.9	1.6	1.4	1.4	1.2	1.1	1.0	1.0	1.0
Women											
15-19 Yrs	2.1	1.5	1.3	0.3	-1.0	-2.8	-2.8	-4.5	-4.4	-3.2	-1.8
20-24 Yrs	2.5	2.1	1.8	1.5	0.8	1.8	1.0	1.0	0.2	-0.7	-2.7
25-34 Yrs	3.3	2.9	2.5	2.3	2.3	2.8	1.0	1.2	1.5	1.8	1.8
35-44 Yrs	1.1	1.5	2.1	2.4	2.2	2.5	5.1	4.3	3.5	3.2	3.1
45-54 Yrs	0.4	-0.4	-0.2	-0.7	-0.4	-0.4	-0.4	-0.2	0.4	0.2	0.7
55-64 Yrs	3.5	3.6	3.5	2.9	2.5	2.7	2.2	2.6	1.6	0.9	0.2
65+ Yrs	3.2	3.6	3.2	3.6	3.7	2.9	2.6	2.5	2.7	3.6	3.9
Total	2.3	2.1	2.0	1.8	1.6	1.5	1.4	1.2	1.1	1.2	1.1
Both Sexes											
15-19 Yrs	2.4	1.6	1.2	0.4	-0.9	-2.7	-3.0	-4.5	-4.3	-3.3	-1.8
20-24 Yrs	2.4	2.6	2.4	1.9	1.5	2.3	1.2	1.2	0.2	-0.8	-2.6
25-34 Yrs	3.2	2.8	2.3	2.1	2.2	2.8	1.0	1.5	1.8	2.1	2.2
35-44 Yrs	0.7	1.4	2.0	2.2	2.1	2.5	5.0	4.2	3.4	3.1	2.9
45-54 Yrs	0.7	0.0	0.0	-0.4	-0.3	-0.4	-0.3	-0.2	0.2	0.0	0.4
55-64 Yrs	3.3	3.2	3.1	2.6	2.3	2.6	2.2	2.6	1.8	1.0	0.5
65+ Yrs	3.0	3.4	3.2	3.4	3.3	2.4	2.2	2.1	2.3	3.3	3.4
Total	2.2	2.1	2.0	1.7	1.5	1.5	1.3	1.2	1.1	1.1	1.1

APPENDIX XVII

DISTRIBUTION OF THE WORKING-AGE POPULATION BY SEX & AGE
ONTARIO 1975 TO 1986

(PERCENT)

SEX AND AGE	Historical						Projected					
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Men												
15-19 Yrs	6.7	6.7	6.7	6.6	6.5	6.4	6.1	5.9	5.5	5.2	5.0	4.9
20-24 Yrs	6.0	6.0	6.0	6.1	6.1	6.2	6.2	6.2	6.3	6.2	6.1	5.9
25-34 Yrs	10.5	10.6	10.6	10.6	10.6	10.7	10.8	10.8	10.9	11.0	11.1	11.3
35-44 Yrs	8.0	7.9	7.8	7.8	7.8	7.9	7.9	8.2	8.5	8.6	8.8	9.0
45-54 Yrs	7.7	7.6	7.4	7.3	7.2	7.0	6.9	6.8	6.7	6.6	6.6	6.5
55-64 Yrs	5.4	5.5	5.5	5.6	5.6	5.6	5.7	5.7	5.8	5.9	5.9	5.8
65+ Yrs	4.8	4.8	4.9	4.9	5.0	5.1	5.1	5.1	5.1	5.2	5.3	5.3
Total	49.0	48.9	48.9	48.9	48.8	48.8	48.8	48.8	48.7	48.7	48.7	48.6
Women												
15-19 Yrs	6.5	6.4	6.4	6.4	6.3	6.1	5.9	5.6	5.3	5.0	4.8	4.7
20-24 Yrs	6.1	6.2	6.2	6.1	6.1	6.1	6.1	6.1	6.1	6.0	5.9	5.7
25-34 Yrs	10.6	10.7	10.8	10.8	10.9	11.0	11.1	11.1	11.1	11.1	11.2	11.3
35-44 Yrs	7.9	7.8	7.8	7.8	7.8	7.9	8.0	8.3	8.5	8.7	8.9	9.1
45-54 Yrs	7.8	7.7	7.5	7.3	7.2	7.0	6.9	6.8	6.7	6.7	6.6	6.6
55-64 Yrs	5.8	5.9	6.0	6.1	6.1	6.2	6.3	6.3	6.4	6.4	6.4	6.4
65+ Yrs	6.4	6.5	6.6	6.6	6.8	6.9	7.0	7.1	7.2	7.3	7.5	7.7
Total	51.0	51.1	51.1	51.1	51.2	51.2	51.2	51.2	51.3	51.3	51.3	51.4
Both Sexes												
15-19 Yrs	13.1	13.1	13.1	13.0	12.8	12.5	12.0	11.5	10.8	10.3	9.8	9.6
20-24 Yrs	12.1	12.1	12.2	12.2	12.2	12.2	12.3	12.3	12.3	12.2	12.0	11.6
25-34 Yrs	21.0	21.2	21.4	21.4	21.5	21.7	21.9	21.9	21.9	22.1	22.3	22.6
35-44 Yrs	15.9	15.7	15.6	15.6	15.6	15.7	15.9	16.5	17.0	17.4	17.7	18.0
45-54 Yrs	15.5	15.2	14.9	14.6	14.3	14.1	13.8	13.6	13.4	13.3	13.2	13.1
55-64 Yrs	11.2	11.4	11.5	11.6	11.7	11.8	11.9	12.0	12.2	12.3	12.3	12.2
65+ Yrs	11.2	11.3	11.4	11.6	11.8	12.0	12.1	12.2	12.3	12.5	12.7	13.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

APPENDIX XVIII

GROWTH RATES OF THE PROJECTED LABOUR FORCE BY SEX AND AGE
ONTARIO, ANNUAL AVERAGES, 1981 TO 1986

(PERCENT)

SEX AND AGE	Low-Growth Scenario						Medium-Growth Scenario						High-Growth Scenario					
	1980 to 1981	1981 to 1982	1982 to 1983	1983 to 1984	1984 to 1985	1985 to 1986	1980 to 1981	1981 to 1982	1982 to 1983	1983 to 1984	1984 to 1985	1985 to 1986	1980 to 1981	1981 to 1982	1982 to 1983	1983 to 1984	1984 to 1985	1985 to 1986
Men																		
15-19 Yrs	-5.9	-2.5	-3.8	-3.6	-2.8	-0.9	-2.7	-2.0	-3.3	-3.0	-2.2	-0.4	-1.2	-1.6	-2.8	-2.9	-1.7	-0.4
20-24 Yrs	3.5	2.0	1.6	0.3	-0.5	-2.4	4.3	1.9	1.9	0.5	-0.3	-2.4	4.6	2.2	1.9	1.1	-0.3	-2.1
25-34 Yrs	2.8	1.2	1.7	2.2	2.3	2.6	3.1	1.2	1.9	2.2	2.5	2.5	3.3	1.2	1.8	2.1	2.6	2.5
35-44 Yrs	2.6	5.1	3.9	3.4	2.9	2.9	2.8	4.9	4.1	3.4	3.1	2.8	3.0	4.9	4.1	3.4	3.1	2.8
45-54 Yrs	0.0	-0.2	-0.2	0.0	0.0	0.0	0.7	-0.2	0.0	0.0	-0.2	0.2	0.9	-0.2	0.0	0.0	-0.2	0.2
55-64 Yrs	2.4	2.0	2.3	2.3	0.6	0.6	2.7	2.3	2.9	2.2	1.2	0.9	4.1	2.3	2.9	2.2	1.2	0.9
65+ Yrs	1.9	-1.9	-1.9	-1.9	0.0	0.0	9.4	0.0	0.0	0.0	0.0	1.7	11.3	1.7	1.7	1.6	3.2	3.1
Total	1.5	1.5	1.3	1.3	1.0	1.0	2.4	1.6	1.6	1.4	1.2	1.1	2.9	1.7	1.7	1.4	1.3	1.2
Women																		
15-19 Yrs	-2.6	-1.8	-3.2	-3.8	-2.0	-1.0	-1.7	-0.9	-2.7	-2.8	-1.4	0.0	-1.3	-0.4	-2.7	-2.3	-0.9	0.0
20-24 Yrs	0.3	1.6	1.9	0.9	0.0	-1.9	1.0	2.6	2.2	1.6	0.9	-1.5	2.3	2.9	2.5	2.1	0.6	-0.9
25-34 Yrs	4.7	2.4	2.7	3.0	3.1	3.3	6.8	3.5	3.7	3.9	4.3	4.1	7.4	3.8	4.1	4.1	4.6	4.4
35-44 Yrs	3.2	6.7	5.8	5.0	4.5	4.5	4.1	7.5	6.7	5.6	5.5	5.2	5.5	7.7	7.1	6.0	5.6	5.5
45-54 Yrs	-1.4	1.1	1.4	2.1	1.7	2.4	-0.7	2.9	2.8	3.4	3.0	3.5	0.0	2.9	2.8	3.4	3.0	3.5
55-64 Yrs	1.3	1.9	3.1	1.8	1.2	0.6	1.3	3.8	3.1	3.0	1.7	1.1	2.6	3.8	3.7	2.9	2.3	1.1
65+ Yrs	5.0	0.0	4.8	4.5	0.0	4.3	35.0	0.0	-3.7	0.0	0.0	0.0	35.0	3.7	3.6	3.4	6.7	3.1
Total	1.5	2.3	2.4	2.1	2.0	2.0	2.9	3.5	3.0	3.0	3.0	2.7	3.9	3.8	3.4	3.3	3.2	3.0
Both Sexes																		
15-19 Yrs	-4.3	-2.2	-3.5	-3.7	-2.4	-1.0	-2.3	-1.5	-3.0	-2.9	-1.8	-0.2	-1.2	-1.0	-2.7	-2.6	-1.3	-0.2
20-24 Yrs	1.8	1.8	1.8	0.6	-0.3	-2.2	2.6	2.2	2.0	1.0	0.3	-2.0	3.4	2.5	2.2	1.6	0.1	-1.5
25-34 Yrs	3.6	1.7	2.1	2.6	2.7	2.9	4.7	2.1	2.7	3.0	3.3	3.2	5.0	2.3	2.8	3.0	3.5	3.4
35-44 Yrs	2.8	5.8	4.7	4.1	3.6	3.6	3.3	6.0	5.2	4.3	4.1	3.9	4.0	6.0	5.4	4.5	4.2	4.0
45-54 Yrs	-0.6	0.3	0.4	0.8	0.7	1.0	0.1	1.0	1.1	1.4	1.1	1.6	0.6	1.0	1.1	1.4	1.1	1.6
55-64 Yrs	2.0	2.0	2.6	2.1	0.8	0.6	2.2	2.9	3.0	2.5	1.4	1.0	3.6	2.8	3.2	2.5	1.6	1.0
65+ Yrs	2.7	-1.3	0.0	0.0	0.0	1.4	16.4	0.0	-1.2	0.0	0.0	1.2	17.8	2.3	2.3	2.2	4.3	3.1
Total	1.5	1.9	1.8	1.6	1.4	1.4	2.6	2.4	2.2	2.0	2.0	1.8	3.3	2.6	2.4	2.2	2.1	2.0

APPENDIX XIX

DISTRIBUTION OF THE PROJECTED LABOUR FORCE BY SEX AND AGE
ONTARIO, 1981 TO 1986

(PERCENT)

SEX AND AGE	Low-Growth Scenario						Medium-Growth Scenario						High-Growth Scenario					
	1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986
Men																		
15-19 Yrs	5.4	5.2	4.9	4.6	4.5	4.4	5.5	5.3	5.0	4.8	4.6	4.5	5.6	5.4	5.1	4.8	4.7	4.5
20-24 Yrs	8.1	8.1	8.1	8.0	7.8	7.5	8.1	8.0	8.0	7.9	7.7	7.4	8.0	8.0	8.0	7.9	7.7	7.4
25-34 Yrs	15.6	15.5	15.5	15.6	15.7	15.9	15.5	15.3	15.3	15.3	15.4	15.5	15.4	15.2	15.1	15.1	15.2	15.3
35-44 Yrs	11.6	11.9	12.2	12.4	12.6	12.7	11.5	11.7	11.9	12.1	12.2	12.4	11.4	11.7	11.8	12.0	12.1	12.2
45-54 Yrs	9.7	9.5	9.4	9.2	9.1	9.0	9.7	9.5	9.3	9.1	8.9	8.7	9.7	9.4	9.2	9.0	8.8	8.6
55-64 Yrs	6.7	6.7	6.8	6.8	6.8	6.7	6.7	6.7	6.7	6.7	6.7	6.6	6.7	6.7	6.7	6.7	6.7	6.6
65+ Yrs	1.2	1.2	1.1	1.1	1.1	1.1	1.3	1.3	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3
Total	58.3	58.2	57.9	57.7	57.5	57.2	58.2	57.8	57.4	57.1	56.6	56.3	58.1	57.6	57.2	56.8	56.3	55.9
Women																		
15-19 Yrs	5.0	4.9	4.6	4.4	4.2	4.1	5.0	4.9	4.6	4.4	4.3	4.2	5.0	4.9	4.6	4.4	4.3	4.2
20-24 Yrs	6.9	6.9	6.9	6.8	6.7	6.5	6.9	6.9	6.9	6.8	6.8	6.5	6.9	6.9	6.9	6.9	6.8	6.6
25-34 Yrs	11.5	11.6	11.7	11.8	12.0	12.2	11.6	11.7	11.9	12.1	12.4	12.7	11.6	11.7	11.9	12.1	12.4	12.7
35-44 Yrs	8.0	8.4	8.8	9.0	9.3	9.6	8.0	8.4	8.8	9.1	9.4	9.7	8.1	8.5	8.9	9.2	9.5	9.8
45-54 Yrs	6.2	6.2	6.1	6.2	6.2	6.2	6.2	6.2	6.3	6.3	6.4	6.5	6.2	6.2	6.2	6.3	6.3	6.4
55-64 Yrs	3.5	3.5	3.6	3.6	3.6	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.5	3.5	3.6	3.6	3.6	3.6
65+ Yrs	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7
Total	41.7	41.8	42.1	42.3	42.5	42.8	41.8	42.2	42.6	42.9	43.4	43.7	41.9	42.4	42.8	43.2	43.7	44.1
Both Sexes																		
15-19 Yrs	10.4	10.0	9.5	9.0	8.7	8.5	10.6	10.2	9.6	9.2	8.8	8.7	10.6	10.2	9.7	9.3	8.9	8.7
20-24 Yrs	15.0	15.0	15.0	14.8	14.5	14.0	14.9	14.9	14.9	14.7	14.5	13.9	14.9	14.9	14.9	14.8	14.5	14.0
25-34 Yrs	27.1	27.1	27.2	27.4	27.7	28.1	27.1	27.0	27.2	27.4	27.8	28.2	27.0	26.9	27.0	27.2	27.6	28.0
35-44 Yrs	19.6	20.3	20.9	21.4	21.9	22.3	19.5	20.2	20.7	21.2	21.7	22.1	19.5	20.1	20.7	21.2	21.6	22.0
45-54 Yrs	16.0	15.7	15.5	15.4	15.3	15.2	15.9	15.7	15.5	15.4	15.3	15.2	15.9	15.6	15.4	15.3	15.1	15.1
55-64 Yrs	10.2	10.3	10.3	10.4	10.3	10.2	10.2	10.2	10.3	10.3	10.3	10.2	10.2	10.3	10.3	10.3	10.3	10.2
65+ Yrs	1.7	1.6	1.6	1.6	1.6	1.6	1.9	1.9	1.8	1.8	1.7	1.7	1.9	1.9	1.9	1.9	1.9	2.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

APPENDIX XX

PROJECTED ANNUAL NET ADDITIONS TO THE LABOUR FORCE BY SEX AND AGE
ONTARIO, 1981 TO 1986
('000s)

SEX AND AGE	Low-Growth Scenario						Medium-Growth Scenario						High-Growth Scenario					
	1980 to 1981	1981 to 1982	1982 to 1983	1983 to 1984	1984 to 1985	1985 to 1986	1980 to 1981	1981 to 1982	1982 to 1983	1983 to 1984	1984 to 1985	1985 to 1986	1980 to 1981	1981 to 1982	1982 to 1983	1983 to 1984	1984 to 1985	1985 to 1986
Men																		
15-19 Yrs	-15	-6	-9	-8	-6	-2	-7	-5	-8	-7	-5	-1	-3	-4	-7	-7	-4	-1
20-24 Yrs	12	7	6	1	-2	-9	15	7	7	2	-1	-9	16	8	7	4	-1	-8
25-34 Yrs	19	8	12	16	17	19	21	8	13	16	18	19	22	8	13	15	19	19
35-44 Yrs	13	26	21	19	17	17	14	25	22	19	18	17	15	25	22	19	18	17
45-54 Yrs	0	-1	-1	0	0	0	3	-1	0	0	-1	1	4	-1	0	0	-1	1
55-64 Yrs	7	6	7	7	2	2	8	7	9	7	4	3	12	7	9	7	4	3
65+ Yrs	1	-1	-1	-1	0	0	5	0	0	0	0	1	6	1	1	1	2	2
Total	38	39	35	34	28	27	60	41	43	37	33	31	73	44	45	39	37	33
Women																		
15-19 Yrs	-6	-4	-7	-8	-4	-2	-4	-2	-6	-6	-3	0	-3	-1	-6	-5	-2	0
20-24 Yrs	1	5	6	3	0	-6	3	8	7	5	3	-5	7	9	8	7	2	-3
25-34 Yrs	23	12	14	16	17	19	33	18	20	22	25	25	36	20	22	23	27	27
35-44 Yrs	11	24	22	20	19	20	14	27	26	23	24	24	19	28	28	25	25	26
45-54 Yrs	-4	3	4	6	5	7	-2	8	8	10	9	11	0	8	8	10	9	11
55-64 Yrs	2	3	5	3	2	1	2	6	5	5	3	2	4	6	6	5	4	2
65+ Yrs	1	0	1	1	0	1	7	0	-1	0	0	0	7	1	1	1	2	1
Total	28	43	45	41	39	40	53	65	59	59	61	57	70	71	67	66	67	64
Both Sexes																		
15-19 Yrs	-21	-10	-16	-16	-10	-4	-11	-7	-14	-13	-8	-1	-6	-5	-13	-12	-6	-1
20-24 Yrs	12	12	12	4	-2	-15	17	15	14	7	2	-14	22	17	15	11	1	-11
25-34 Yrs	42	20	26	32	34	38	54	26	33	38	43	44	58	28	35	38	46	46
35-44 Yrs	24	50	43	39	36	37	28	52	48	42	42	41	34	53	50	44	43	43
45-54 Yrs	-4	2	3	6	5	7	1	7	8	10	8	12	4	7	8	10	8	12
55-64 Yrs	9	9	12	10	4	3	10	13	14	12	7	5	16	13	15	12	8	5
65+ Yrs	2	-1	0	0	0	1	12	0	-1	0	0	1	13	2	2	2	4	3
Total	66	82	80	75	67	67	113	106	102	96	94	88	143	115	112	105	104	97

APPENDIX XXI

OTHER TRAINING PROGRAMS IN ONTARIO

The Apprenticeship Programs

For those interested in learning skilled trades and becoming qualified tradespeople, the Ontario Ministry of Colleges and Universities offers apprenticeship training. The theory behind apprenticeship training emphasizes learning by doing. In Ontario, apprenticeship is a systematic program of on-the-job training and related classroom instruction designed to produce fully-qualified tradespeople or journeymen as prescribed in the Apprenticeship and Tradesmen's Qualification Act.

The minimum educational qualification to register as an apprentice is grade 8 to grade 10 depending on the trade. An apprentice while undergoing training is employed and therefore is in the labour force. Upon completion the trainee is qualified to enter highly skilled or in some cases medium skilled blue-collar occupations.

Apprenticeship training is offered in more than 300 trades in Ontario. These trades can be differentiated according to whether they are regulated or non-regulated under the Apprenticeship and Tradesmen's Qualification Act. A regulated trade is one that has been specifically identified under the Act as an apprenticeable trade and for which specific trade regulations are set down. Standard training schedules and examinations are also specified for the regulated trades. For the non-regulated trades there are no standard trade definitions and no fixed requirements for final examinations.

Among the regulated trades there are two kinds: those requiring compulsory certification (where you must possess a Certificate of Qualification or be a registered apprentice to work at the trade) and those requiring voluntary certification (where it is up to the worker whether or not he/she

wishes to qualify for a certificate of Qualification). Of the 60 regulated trades in Ontario, 17 require a compulsory Certificate of Qualification and the remaining 43 are regulated on a voluntary basis (see Appendix XXII for a list of the regulated trades). The regulated trades are concentrated primarily in two areas: construction trades and automotive and heavy equipment repair trades. Some of the service trades such as Barbers and Hairdressers are also covered under the regulated trades.

The non-regulated trades are concentrated primarily in the manufacturing sector where it is difficult to specify common training requirements within a trade because of variations between industries and even between plants within an industry. Only recently some of the industrial trades have become regulated; i.e., in 1978, General Machinist, Tool and Die Maker, and Mouldmaker became regulated. In 1979, Industrial Mechanic (Millwright) became regulated. However, they still do not require compulsory certification.

Historical data on apprenticeship registrations and completions were obtained from the Apprenticeship Branch of the Ministry of Colleges and Universities. Apprenticeship completions for the period 1981 to 1986 were projected based on current registrations and historical completion rates.

The projections of labour supply from the apprenticeship training programs are presented in Table 36. The data shows that, between 1981 and 1986, the total number of apprenticeship completions is projected to be 36,000. The distribution of these apprenticeship completions by broad trade groups is as follows:

- 30.5 per cent or 11,000 in construction trades;
- 37.5 per cent or 13,500 in motive power trades;
- 9.2 per cent or 3,300 in service trades;
- 9.2 per cent or 3,300 in industrial trades;
- 13.6 per cent or 4,900 in non-regulated trades.

The Modular Training Program

The modular training program is a performance-based training system as opposed to apprenticeship training which is time-based. It is delivered in incremental steps with accreditation for trainees provided at every interval.

The skill and knowledge components required in an occupation are identified and grouped into modules. The training package can then be tailored to individual training needs by pre-testing the individual and selecting only appropriate modules as necessary.

The modular training program was formally established in 1968. Although the modular training program is not covered by the Apprenticeship and Tradesmen's Qualification Act, it may be used to provide training in the "apprenticeable" trades. The modular training program has been experiencing a tremendous expansion in recent years. There are now well over 1,600 training modules that have been approved and validated by the Ministry of Colleges and Universities. More than 150 distinct training programs have been developed through this process.

Since the Modular Administrative System was developed only recently (1976 and 1977) data on active trainees and completions are available from 1978-79 only. These administrative data show that there were 4,932 active trainees in the modular training programs in 1979-80. Of these 2,805 completed training during 1979-80. The distribution of the number of trainees who completed their training during 1979-80 by occupation groups is as follows:

Mining	1,132
Stationary Engineers	1,251
Construction	422

If we assume that the number of persons completing the modular training program will remain constant at the 1979-80 level, then this program should enable 16,800 persons to move from low-level skills to highly-skilled blue-collar occupations during the 1981-86 period. The majority of these are likely to be stationary engineers or those in the mining occupations.

The Canada Manpower Training Programs

The Canada Manpower Training Programs offer members of the labour force an opportunity to acquire new skills for an occupation or to enhance their current skills or proficiency levels.

These programs are administered by the Canada Employment and Immigration Commission under the provision of the Adult Occupational

Training Act (AOTA). These programs are operated in cooperation with the provinces and are administered through the Canada Employment Centres. Two approaches to training are utilized - one involves institutional training and the other industrial (employer - centred) training.

The Institutional Training (CMTP)

Institutional training takes place in various educational establishments such as community colleges, institutes of technology and to a lesser extent in private vocational schools. There are six types of institutional training. They are: Basic Training for Skill Development (BTSD), Job Readiness Training (JRT), Work Adjustment Training (WAT), Language Training, Apprenticeship Training and Skill Training.

BTSD is designed to upgrade basic skills in mathematics, science and communication to the academic level required for entry into skill training. Language training in English or French is given primarily to new immigrants to enable them to obtain employment in their usual occupation. JRT is an employment - oriented training which may include elements of life skills, work experience, job orientation and academic upgrading. WAT is a type of training (sheltered workshop and job exposure) provided to adults who are faced with difficulties in obtaining or maintaining employment because of behaviour inconsistent with the requirements of employment.

The apprenticeship training under CMTP refers to the institutional portion of the training offered under the Apprenticeship and Tradesmen's Qualification Act. In terms of potential labour supply, the trainees under this program are included in the discussion on Apprenticeship programs discussed earlier.

In 1980-81, there were 55,286 trainees enrolled in full-time institutional training programs including the trainees under the apprenticeship programs. Of these, 72.2 per cent or 39,896 trainees completed the training programs.

Among the various institutional training programs, only skill training leads to the acquisition of occupational skills. In 1980-81, approximately 13,000 trainees were enrolled in skill training programs of various duration. Unfortunately, data on the distribution of these trainees either by duration of

training or occupation of training are not available. Consequently, we were unable to develop an estimate of the number of medium skilled workers who could be available upon completion of these programs over the projection period.

The Industrial Training (CMITP)

Industrial training takes place in an industrial setting where instruction may be given on-the-job, in a classroom or a special training area, or as a combination of the above methods. Canada Employment and Immigration Commission negotiates a contract with an employer or a group of employers in which the Commission agrees to reimburse a portion of certain training costs incurred by the employer.

Employer-centred training has two main components: the Canada Manpower Industrial Training Program (CMITP) and the Critical Trade Skills Training (CTST).

CMITP is a shared-cost incentive training program aimed at meeting the skill needs of employers. It improves the employability and earning capacity of workers through expansion and improvement of training provided by employers.

CTST is a new industrial training initiative which focusses on selected highly skilled trades and occupations. Its objective is to encourage industry to develop and expand the training of tradesmen in skilled occupations where chronic shortages are being experienced.

The length of training supported under the CMITP is of short duration. At present little information is available on either the number or the skill level of training provided under CMITP. It was, therefore, not possible to estimate the number of highly or medium skilled workers who could be available, through this source, over the projection period.

In-House Training in Industry

In addition to the traditional apprenticeship programs, many firms provide a variety of other formal and informal training programs to their employees. However, very little information is available on the extent and

nature of the training activity in industry. A survey[1] conducted by the Ontario Ministry of Labour in 1969 showed most of the trainees were enrolled in courses of very short duration. Only 9.5 per cent of the trainees received training of six months duration or more. Statistics Canada's supplementary Labour Force Survey[2] conducted in December 1973 reported that only 6 per cent of the trainees in industry training programs attended courses of 25 or more weeks of duration. According to a recent survey conducted by the Economic Council of Canada in 1980,[3] only 16.5 per cent of all trainees in Canada and 15.3 per cent of all trainees in Ontario were in programs of 6 months duration or more.

The conclusion that these studies arrived at is that most of the trainees are enrolled in courses of very short duration which implies that the magnitude of the skills developed through in-industry tranining programs in recent years may be limited.

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[1]Ontario Ministry of Labour, Industry-Sponsored Training Programs in Ontario, August 1968 - July 1969, May 1973.

[2]Statistics Canada, "Employer Sponsored Training Programs", The Labour Force, cat. No. 71-001, January 1975.

[3]Economic Council of Canada, Human Resources Survey, 1980, Ottawa, (unpublished data).

APPENDIX XXII

LIST OF REGULATED TRADES IN THE APPRENTICESHIP TRAINING PROGRAM IN ONTARIO

Trade	Code	Periods of Hrs. in Prog.[1]
Construction		
Construction Boilermaker	428A	4 x 1650
Brick & Stone Mason	401A	4 x 1400
Cement Mason	419A	3 x 2000
Power Lineman	434A	4 x 2000
Constr. Lineman	434B	1 x 2500 2 x 2000
Constr. Maint. Electr.	309A	5 x 1800
Domestic & Rural Electr.	309C	4 x 1800
Glazier & Metal Mech.	424A	4 x 2000
Ironworker	420A	3 x 2000
Lather	418A	3 x 1800
Constr. Millwright	426A	4 x 2000
Comm. & Res. Painter	404A	3 x 1800
Industrial Painter	404B	3 x 1800
Plasterer	405A	4 x 1600
Plumber	306A	5 x 1800
Refrig. & Air Cond. Mech.	313A	5 x 1800
Sheet Metal Worker	308A	5 x 1800
Sprink. & Fire Prot. Inst.	427A	4 x 1800
Steamfitter	307A	5 x 1800
General Carpenter	403A	20 Units
Industrial		
General Machinist	429A	4 x 1500
General Machinist	429X	4 x 2000
Tool & Die Maker	430A	4 x 2000
Mould Maker	431A	4 x 2000
Ind. Mechanic (Millwright)	433A	4 x 2000
Fitter (Structural Steel/ Platework)	437A	3 x 1800
Motive Power		
Alignment & Brakes Mech.	310E	3 x 1800
Auto Body Repairer	310B	4 x 1800
Automotive Machinist	410K	4 x 1800
Automotive Painter	410N	2 x 1800
Fuel & Elec. Sys. Mech.	310C	3 x 1800
Farm Equipment Mech.	425A	5 x 1800
Heavy Duty Equip. Mech.	421A	5 x 1800
Motorcycle Mechanic	310G	3 x 1800
Motor Vehicle Mechanic	310A	5 x 1800
Service Station Attendant	422A	2 x 1800
Transmission Mechanic	310D	3 x 1800
Truck Trailer Repairer	310J	3 x 1800

Trade	Code	Periods of Hrs. in Prog.[1]
Motive Power Cont'd		
Small Engine Mechanic	435A	2 x 2000
Marina & Sm. Powered Equipment Mechanic	435B	2 x 2000
Small Eng. Mech. (Constr.)	435C	2 x 2000
Boat Motor Mechanic	435D	4 x 1800
Service		
Printer-Letter Press (Job Shop)	436A	4 x 2000
Printer-Lithography (Job Shop)	436B	4 x 2000
Offset Pressman (Plant)	436C	4 x 2000
Linotype Operator	436D	4 x 2000
Compositor	436E	4 x 2000
Pressman-Letter Press	436F	4 x 2000
Compositor-Photo Typesetting	436G	4 x 2000
Compositor & Camera Tech.	436H	5 x 2200
Baker 2	423A	3 x 2000
Junior Baker 1	423B	1 x 2000
Assistant Cook 1	415B	1 x 2000
Cook 2	415A	3 x 2000
Dry Cleaner	417A	4 x 900
Hairdresser	311A	3 x 1500
Hairstylist	332A	3 x 1580
Barber	312A	3 x 1500
Radio & Tele. Serv. Tech.	416A	4 x 2000
Watch Repairer	314A	3 x 1800

Notes: 1. Trades which require more than 2,000 hours of training were designated as highly skilled trades.

Source: Apprenticeship Branch, Ministry of Colleges and Universities.